

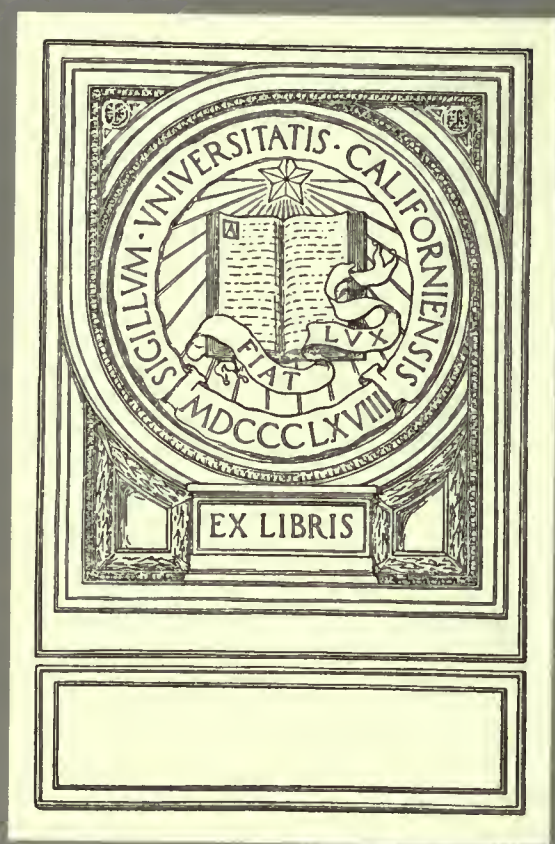
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U S DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
SAM. L. ROGERS, DIRECTOR

CENSUS OF SHIPBUILDING

(INCLUDING BOAT BUILDING)

1916 AND 1914



Prepared under the supervision of EUGENE F. HARTLEY, Chief Statistician for Manufactures

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Scope of census.—Census statistics of manufactures are compiled primarily for the purpose of showing the absolute and relative magnitude of the different branches of industry covered and their growth or decline. Incidentally, the effort is made to present data throwing light upon character of ownership, size of establishments, and similar subjects. When use is made of the statistics for these purposes it is imperative that due attention should be given to their limitations, particularly in connection with any attempt to derive from them figures purporting to show average wages, cost of production, or profits.

The census did not cover establishments which were idle during the entire year or whose products were valued at less than \$500, or the manufacturing done in educational, eleemosynary, and penal institutions.

Period covered.—The returns relate to the calendar year 1914, or the business year which corresponded most nearly to that calendar year, and cover a year's operations, except for establishments which began or discontinued business during the year.

The establishment.—As a rule, the term "establishment" represents a single plant or factory, but in some cases it represents two or more plants which were operated under a common ownership or for which one set of books of account was kept. If, however, the plants constituting an establishment as thus defined were not all located within the same city or state, separate reports were secured in order that the figures for each plant might be included in the statistics for the city or state in which it was located.

Influence of increased prices.—In comparing figures for cost of materials, value of products, and value added by manufacture in 1914 and 1909 with the corresponding figures for earlier censuses, account should be taken of the general increase in the prices of commodities during recent years. To the extent to which this factor has been influential the figures fail to afford an exact measure of the increase in the volume of business.

Persons engaged in the industry.—The following general classes of persons engaged in the industry distinguished: (1) Proprietors and firm members, (2) salaried officers of corporations, (3) superintendents and managers, (4) clerks (including other subordinate salaried employees), and (5) wage earners. In the reports for the censuses of 1904 and 1899 these five classes were shown according to the three main groups: (1) Proprietors and firm members, (2) salaried officials, clerks, etc., and (3) wage earners. In comparative tables covering the census of 1904 it is of course necessary to group the figures according to the classification that was employed at the earlier censuses.

The number of persons engaged in the industry, distributed by sex, and, in the case of wage earners, also by age (whether under 16 or 16 and over), was reported for a single representative day. The 15th of December was selected as representing for most establishments normal conditions of employment, but where this date was not a representative day an earlier date was chosen.

In the case of employees other than wage earners the number thus reported for the representative date has been treated as equivalent to the average for the year, since the number of employees of this class does not ordinarily vary much from month to month. In the case of wage earners the average has been obtained in the manner explained in the next paragraph.

In addition to the more detailed report by sex and age of the number of wage earners on the representative date, a report was obtained of the number employed on the 15th of each month, without distinction of sex or age. From these figures the average number of wage earners for the year has been calculated by dividing the sum of the numbers reported for the several months by 12. The average thus obtained approximates the number of wage earners that would be required to perform the work done if all were constantly employed during the entire year. Accordingly, the importance of the industry as an employer of labor is believed to be more accurately measured by this average than by the number employed at any one time or on a given day.

In order to determine as nearly as possible the sex and age distribution of the average number of wage earners for the industry as a whole, the per cent distribution by sex and age of the wage earners reported for December 15, or the nearest representative day, has been calculated from the actual number reported for that date, the percentages thus obtained have been applied to the average number of wage earners for the year in the industry to determine the average number of men, women, and children employed.

Salaries and wages.—Under these heads are given the total payments during the year for salaries and wages, respectively. The Census Bureau has not undertaken to calculate the average annual earnings of either salaried employees or wage earners. Such averages would possess little real value, because they would be based on the earnings of employees of both sexes, of all ages, and of widely varying degrees of skill. Furthermore, so far as wage earners are concerned, it would be impossible to calculate accurately even so

simple an average as this, since the number of wage earners fluctuates from month to month. The Census Bureau's figures for wage earners, as already explained, are averages based on the number employed on the 15th of each month and represent the approximate number who would be required to perform the work if all were continuously employed during the year, whereas the actual number to whom the total wages were paid would be larger.

Prevailing hours of labor.—No attempt was made to ascertain the number of wage earners working a given number of hours per week. The inquiry called merely for the prevailing practice followed in each establishment. Occasional variations in hours in an establishment from one part of the year to another were disregarded, and no attention was paid to the fact that a limited number of wage earners might have hours differing from those of the majority. All the wage earners of each establishment are therefore counted in the class within which the establishment itself falls. In most establishments, however, all or practically all the wage earners work the same number of hours, so that the figures give a substantially correct representation of the hours of labor.

Capital.—The instructions on the schedule for securing data relating to capital were as follows:

The answer should show the total amount of capital, both owned and borrowed, on the last day of the business year reported. All the items of fixed and live capital may be taken at the amounts carried on the books. If land or buildings are rented that fact should be stated and no value given. If a part of the land or building is owned, the remainder being rented, that fact should be so stated and only the value of the owned property given. Do not include securities and loans representing investments in other enterprises.

These instructions were identical with those employed at the census of 1909. The data compiled in respect to capital, however, at both censuses, as well as at all preceding censuses of manufactures have been so defective as to be of little value except as indicating very general conditions. In fact, it has been repeatedly recommended by the census authorities that this inquiry be omitted from the schedule. While there are some establishments whose accounting systems are such that an accurate return for capital could be made, this is not true of the great majority, and the figures therefore do not show the actual amount of capital invested.

Materials.—The statistics as to cost of materials relate to the materials used during the year, which may be more or less than the materials purchased during the year. The term "materials" covers fuel, rent of power and heat, mill supplies, and containers as well as materials which form a constituent part of the product.

Rent and taxes.—The taxes include internal revenue, corporation income tax, and state, county, and local taxes. In some instances the amount of the corporation tax for 1914 had not been ascertained when the report was prepared and the amount paid for 1913 was given.

Value of products.—The amounts given under this heading represent the selling value or price at the factory of all products manufactured during the year, which may differ from the value of the products sold.

Value added by manufacture.—The value of products is not a satisfactory measure of either the absolute or the relative importance of a given industry, because only a part of this value is actually created by the manufacturing processes carried on in the industry itself. Another part, and often by far the larger one, represents the value of the materials used. For many purposes, therefore, the best measure of the importance of an industry is the value created by the manufacturing operations carried on within the industry. This value is calculated by deducting the cost of the materials used from the value of the products. The figure thus obtained is termed in the census reports "value added by manufacture."

Cost of manufacture and profits.—The census data do not show the entire cost of manufacture, and consequently can not be used for the calculation of profits. No account has been taken of interest or depreciation, rent of offices and buildings other than factory or works, insurance, ordinary repairs, advertising, and other sundry expenses.

Primary horsepower.—This item represents the total primary power generated by the manufacturing establishments plus the amount of power, principally electric, rented from other concerns. It does not cover the power of electric motors taking their current from dynamos driven by primary power machines operated by the same establishment, because the inclusion of such power would obviously result in duplication. The figures for primary horsepower represent the rated capacity of the engines, motors, etc., and not the amount of power in actual daily use, since in most cases an engine or motor is not required to deliver continuously its full rated horsepower.

Fuel.—Statistics of the quantity of fuel used are shown only for anthracite and bituminous coal, coke, oil, and gas. They relate to the quantity used during the year, which may be more or less than the quantity purchased. As only the principal varieties of fuel are shown, no comparison can be made with the total cost of all fuel.

SHIPBUILDING, INCLUDING BOAT BUILDING.

By EVERETT SPRING.

GENERAL STATISTICS.

Scope and character of the industry.—The statistics for this industry cover establishments engaged in the construction and repair of vessels, ships, and boats of all classes. Data for shipyards operated by the Federal Government were also collected, but are shown separately and are not included in the totals for the industry. A number of establishments, not properly classified with the shipbuilding industry, also incidentally built or repaired ships or boats, but the amount contributed to the industry by these establishments was small, and unless so stated, the tables do not include statistics relating to them. As generally used in this report the term "ship" or "vessel" refers to craft of 5 gross tons measurement or over, while craft under 5 gross tons are designated as boats.

In compiling the statistics for the shipbuilding industry the Bureau of the Census distinguishes between establishments in the steel shipbuilding branch of the industry and those engaged in wooden shipbuilding and boat building. The first group is divided into (1) establishments doing construction work on steel vessels of 5 gross tons or over and (2) establishments doing repair work only on steel vessels. The second group, wooden shipbuilding and boat building, is divided into four classes: (1) Establishments engaged in new construction work on wooden vessels of 5 gross tons or over; (2) establishments doing repair work only, on wooden vessels; (3) establishments engaged mainly in building or repairing boats of less than 5 gross tons; and (4) establishments making masts, spars, oars, and ship accessories, and those engaged in rigging vessels. These divisions and groups are used for purposes of comparison as they are as nearly as possible the same for all censuses.

Although the statistics for the industry for 1914 were collected in connection with the quinquennial census of manufactures for that year, they were not published at the time, owing to the inadvisability of making public the information during the war, but the figures were used by the Shipping Board and the other war agencies of the Government; later a further canvass was made of the industry, to cover the operations of the year 1916, for the use of the various war boards, and these statistics have been incorporated in the present bulletin.

Summary for the industry: 1916 and 1914.—Table 1 presents a comparative summary of the principal statistics of establishments in the shipbuilding industry, by branches and by subbranches, for the years 1916 and 1914.

A marked feature of the industry shown by the table is the large increase in the capital invested. The increase for the year 1916, as compared with 1914, was \$87,157,931, or 55.8 per cent. In steel shipbuilding establishments the increase in capital for the two-year period was \$76,805,484, or 57.9 per cent, while the wooden branch of the industry increased \$10,352,447, or 44.3 per cent, in the same period. The great majority of the establishments engaged in the construction of steel vessels are large plants with costly and expensive equipment, whereas a large proportion of the establishments building wooden vessels are small yards engaged in repair work or the building of vessels of comparatively small tonnage.

As compared with the total number of establishments reported for the entire shipbuilding industry, those plants constructing and repairing steel ships form but a small proportion, 6.9 per cent in 1914 and 9.6 per cent in 1916. The relative importance of this branch of the industry, however, is shown by the fact that in 1914 and 1916 it gave employment to 75.3 per cent and 77.6 per cent, respectively, of the total number of wage earners, and contributed 74.7 per cent and 77.8 per cent, respectively, of the aggregate value of products.

In considering the extent of that branch of the industry engaged in constructing wooden vessels, it is well to remember that there are many establishments making small boats, masts, spars, and oars, or in rigging vessels, the figures for which are included in the totals for wooden shipbuilding and boat building.

The relative importance of the various divisions of the shipbuilding industry may be seen from the relation that the value of the products for each branch bears to the total products of the industry, which were \$88,682,071 in 1914 and \$185,852,192 in 1916. In steel shipbuilding the value of products of establishments doing new construction work, on vessels launched and on the ways, was 61.3 per cent

of the total for all products of the industry in 1914 and 64.1 per cent in 1916, while the percentage of products for those establishments doing repair work only was 13.4 per cent in 1914 and 13.7 per cent in 1916. The proportion of the total value of products contributed by establishments in wooden shipbuilding engaged in new construction was 11.8 per cent in 1914 and 13.4 per cent in 1916; by those establishments doing repair work only, 8.2 per cent in 1914 and 4.7 per cent in 1916; and by those establishments

constructing boats of less than 5 gross tons and manufacturing masts, spars, and oars, and in rigging vessels, 5.4 per cent in 1914 and 4.1 per cent in 1916.

There were 907 establishments in 1914 and 827 in 1916 engaged mainly in new construction on ships and boats of all classes. These gave employment to 78.2 per cent of all persons employed in 1914 and 82.4 per cent in 1916, and likewise reported 78 per cent of the value of all products in 1914 and 81.3 per cent in 1916.

Table 1

SHIPBUILDING, INCLUDING BOAT BUILDING.

	Census year.	Aggregate.	Steel vessels.			Wooden, including boat building.				
			Total.	New construction on vessels of 5 tons and over.	Repair work only.	Total.	Vessels.		Boats under 5 tons—construction and repairs.	Masts, spars, oars, and rigging vessels.
							New construction on vessels of 5 tons and over.	Repair work only.		
Number of establishments.....	1916	1,137	109	72	37	1,028	339	248	416	25
	1914	1,147	79	46	33	1,068	273	179	588	28
Persons engaged.....	1916	78,333	59,802	51,230	8,572	18,531	10,395	4,932	2,949	255
	1914	48,667	35,664	29,848	5,816	13,003	6,472	4,671	2,749	211
Proprietors and firm members.....	1916	1,103	35	15	20	1,068	364	216	461	27
	1914	1,192	24	7	17	1,168	332	152	657	27
Salaried employees.....	1916	4,733	3,530	3,073	457	1,203	667	311	213	12
	1914	2,986	2,132	1,609	433	854	338	310	197	9
Wage earners (average number).....	1916	72,497	56,237	48,142	8,095	16,260	9,364	4,405	2,275	216
	1914	44,489	33,508	28,142	5,366	10,981	4,802	4,109	1,895	175
Primary horsepower.....	1916	115,333	83,706	63,888	19,818	31,627	14,148	11,180	5,770	529
	1914									
Capital.....	1916	\$243,217,869	\$209,517,898	\$190,391,607	\$19,126,291	\$33,699,971	\$17,394,882	\$10,204,049	\$5,403,418	\$697,622
	1914	156,059,938	132,712,414	112,630,389	20,082,025	23,347,524	9,579,832	8,946,660	4,614,178	206,854
Salaries and wages.....	1916	67,526,623	53,367,771	43,816,888	9,550,883	14,158,852	8,253,659	3,830,740	1,891,039	183,414
	1914	37,689,965	28,752,404	23,520,313	5,232,091	8,937,561	3,940,934	3,360,143	1,502,905	133,579
Salaries.....	1916	6,950,722	5,347,648	4,672,207	675,441	1,603,074	915,618	437,173	234,205	16,078
	1914	4,758,809	3,586,612	2,801,588	785,024	1,172,197	525,032	414,155	223,061	9,949
Wages.....	1916	60,575,901	48,020,123	39,144,681	8,875,442	12,555,778	7,338,041	3,393,567	1,656,834	167,336
	1914	32,931,156	25,165,792	20,718,725	4,447,067	7,765,364	3,415,902	2,945,988	1,279,844	123,630
Paid for contract work.....	1916	4,092,789	3,911,332	3,268,575	642,757	181,457	118,012	55,193	8,147	105
	1914	531,779	442,135	206,194	235,941	89,644	34,094	39,257	15,717	576
Rent and taxes (including internal revenue).....	1916									
	1914	1,123,144	668,965	419,286	249,679	454,179	151,623	189,218	104,474	8,864
Cost of materials.....	1916	89,268,830	69,961,072	61,957,923	8,003,149	19,307,758	11,700,716	3,160,413	4,241,368	205,261
	1914	38,596,970	29,269,727	25,825,634	3,444,093	9,327,243	4,691,331	2,517,787	1,956,734	161,751
Value of products.....	1916	185,852,192	144,619,111	119,155,601	25,463,510	41,233,081	24,902,116	8,763,825	7,069,017	508,123
	1914	88,682,071	66,216,692	54,339,778	11,876,914	22,465,379	10,427,681	7,255,951	4,413,757	367,990
Value added by manufacture (value of products less cost of materials).....	1916	96,583,362	74,658,039	57,197,678	17,460,361	21,925,323	13,201,400	5,603,412	2,817,649	302,862
	1914	50,085,101	36,946,965	28,514,144	8,432,821	13,138,136	5,736,350	4,738,164	2,457,383	206,239

¹ Includes 4 establishments making boats under 5 tons, and 1 making masts, spars, oars, and the rigging of vessels.

² Not reported.

Comparison with earlier censuses.—Table 2 summarizes the statistics of the establishments engaged in shipbuilding for each census from 1879 to 1916, inclusive, and gives percentages of increase or decrease from census to census. The figures for 1869, comparable with corresponding items given in the table for 1879 and later years, were: Number of establishments, 964; wage earners (average number), 13,915; primary horsepower, 5,136; capital, \$11,463,076; salaries and wages, \$7,073,400; cost of materials, \$9,379,980; value of products, \$21,483,967; and value added by manufacture, \$12,103,987. The financial figures for 1869 are given in currency, which at the time was worth only about 80 cents gold to

the dollar. For strict comparison, therefore, these figures should be reduced about 20 per cent.

While there was a decrease in the number of establishments from 1914 to 1916, all of the other items except number of proprietors and firm members showed a decided increase for this period. During the 37 years covered by the table, the average number of wage earners increased from 21,345 to 72,497, or 239.6 per cent, while the total value of products, including repair work, increased from \$36,800,327 to \$185,852,192, or 405 per cent. The capital invested in the industry shows a large increase during the period, from \$20,979,874 in 1879 to \$243,217,869 in 1916, or nearly twelvefold, and the average capital

per establishment increased from \$9,589 to \$213,912. These increases indicate that, as the construction of steel ships has grown in importance, capital has become far more necessary to the development of the industry than was the case when ships were constructed of wood only. In 1879 the value of products

was nearly twice the capital invested, the ratio being 1.75. In 1899, for the first time, the value of products was less than the capital invested and the ratio of value of products to the capital decreased until 1914, when it was 0.57, with an increase to 0.76 in 1916, due largely to the increase in values incident to the war.

Table 2

	SHIPBUILDING, INCLUDING BOAT BUILDING.							PER CENT OF INCREASE. ¹					
	1916	1914	1909	1904	1899	1889	1879	1914-1916	1904-1914	1904-1909	1899-1904	1889-1899	1879-1889
Number of establishments	1,137	1,147	1,353	1,097	1,107	1,006	2,188	-0.9	-15.2	23.3	-0.9	10.0	-54.0
Persons engaged	78,333	48,667	44,949	54,424	(²)	(²)	(²)	61.0	8.3	-17.4	.....	.....	.....
Proprietors and firm members	1,103	1,192	1,463	1,190	(²)	(²)	(²)	-7.5	-18.5	22.9	.....	.....	.....
Salaried employees	4,733	2,966	2,980	2,480	1,405	(²)	(²)	58.5	0.2	20.2	76.5	.....	.....
Wage earners (average number)	72,497	44,489	40,506	50,754	46,747	22,143	21,345	63.0	9.8	-20.2	8.6	111.1	(³)
Primary horsepower	(⁴)	115,333	88,063	78,127	61,797	18,192	(⁵)	.....	31.0	12.7	26.4	239.7	.....
Capital	\$243,217,869	\$156,059,938	\$126,118,489	\$121,623,700	\$77,341,001	\$27,262,892	\$20,979,874	55.8	23.7	3.7	57.3	183.7	29.9
Salaries and wages	67,526,623	37,689,965	29,303,132	32,580,828	26,831,975	14,278,819	12,713,813	79.2	28.6	-10.1	21.4	87.9	12.3
Salaries	6,950,722	4,758,809	4,035,446	3,339,741	2,007,237	(²)	(²)	46.1	17.9	20.8	66.4	.....	.....
Wages	60,575,901	32,931,156	25,267,686	29,241,087	24,824,738	(²)	(²)	83.9	30.3	-13.6	17.8	89.7	2.9
Paid for contract work	4,092,789	531,779	1,185,579	674,418	(²)	(²)	(²)	669.6	-55.1	75.8	.....	.....	.....
Rent and taxes (including internal revenue)	(⁴)	1,123,144	835,656	640,519	(²)	(²)	(²)	.....	34.4	.....	.....	.....	.....
Cost of materials	89,268,830	38,596,970	31,214,358	37,463,179	33,474,896	16,521,246	19,736,358	131.3	23.7	-16.7	11.9	102.6	-16.3
Value of products	185,852,192	88,682,071	73,360,315	82,766,239	74,532,277	38,065,410	36,800,327	109.6	20.9	-11.4	11.1	95.8	3.4
Value added by manufacture (value of products less cost of materials)	96,583,362	50,085,101	42,145,957	45,306,060	41,057,381	21,544,164	17,063,969	92.8	18.8	-7.0	10.3	90.6	26.3

¹ A minus sign (-) denotes decrease.

² Figures not available.

³ Figures not strictly comparable.

⁴ Not reported.

⁵ Exclusive of internal revenue.

Government shipyards.—Table 3 presents, for 1916, 1914, 1909, and 1904, a comparative summary of the more important statistics of shipbuilding establishments operated by the Federal Government.

Table 3

	GOVERNMENT SHIPYARDS.			
	1916	1914	1909	1904
Number of establishments	30	13	12	9
Persons engaged	23,528	18,328	16,425	13,932
Salaried employees	3,464	2,543	1,888	1,728
Wage earners (average number)	20,064	15,785	14,537	12,204
Primary horsepower	(¹)	82,498	32,525	13,933
Salaries and wages	\$22,232,313	\$16,428,497	\$15,317,330	\$11,853,299
Salaries	4,451,210	3,336,830	2,646,806	2,130,475
Wages	17,781,103	13,091,667	12,670,524	9,722,764
Cost of materials	14,077,767	11,103,113	9,526,109	6,731,931
Value of work done during the year	38,674,491	29,217,265	25,872,033	17,265,469
New vessels (5 gross tons and over)	8,811,863	4,612,311	1,977,977	3,610,270
Vessels launched	3,376,710	1,385,131	156,141	(²)
Steel vessels	3,021,645	1,298,511	34,106	(²)
Steam	2,922,566	966,502	.....	(²)
Unrigged	99,079	332,009	34,106	(²)
Wooden vessels	355,065	86,620	122,035	(²)
Steam	127,702	31,346	68,104	(²)
Motor	138,912	30,097	.....	(²)
Unrigged	88,451	25,177	53,931	(²)
Vessels building but not launched	5,435,153	3,227,180	1,821,836	(²)
Steel	5,361,448	3,101,014	1,821,836	(²)
Wooden	73,705	126,166	.....	(²)
Boats (less than 5 gross tons)	351,339	175,730	153,346	376,250
All other products including repair work	29,511,289	24,429,224	23,740,710	13,278,949

¹ Not reported.

² Figures not available.

From 1914 to 1916 the number of shipbuilding plants owned by the Federal Government more than doubled, increasing from 13 to 30. In 1916, 21 of these plants were operated by the Office of Chief of Engineers of the War Department, 8 by the Bureau of Yards and Docks of the Navy Department, and 1 by the Bureau of Lighthouses of the Department of Commerce.

During 1916 these establishments gave employment to an average of 20,064 wage earners, an in-

crease of 4,279, or 27.1 per cent, over the number employed in 1914, and representing 21.7 per cent of the total number employed in shipyards, private and Government combined. The value of all work done in the Government shipyards in 1916 was \$38,674,491, an increase of \$9,457,226, or 32.4 per cent of the amount reported in 1914.

Nearly every item shows increases for the different periods covered by the table, but the increases are considerably greater between 1914 and 1916 than during any other period, the only decreases during this period being in the value of work done during the year on unrigged steel vessels and on wooden vessels not launched during 1916. The table shows that in 1916 there were constructed and launched steel vessels, both steam and unrigged, to the value of \$3,021,645, and wooden vessels, steam, motor, and unrigged, valued at \$355,065. This is an increase over 1914 of \$1,723,134, or 132.7 per cent, for the former class, and \$268,445, or 309.9 per cent, for the latter class.

The work performed at the several Government shipyards consisted of the repair of naval vessels, the construction of ships, boats, signal apparatus, and buoy lanterns, and the building and repair of machinery, etc. It was impossible to make a separate presentation of each kind of work done and the figures presented in Table 3 include, therefore, statistics that do not properly pertain to shipbuilding or repairing. The value of "all other products including repair work," amounted to \$29,511,289 in 1916 and represented 76.3 per cent of the total value of the work done during the year. The corresponding percentages for 1904, 1909, and 1914 were 76.9, 91.8, and 83.6, respectively.

This table brings out the fact that between 1914 and 1916 there was a great increase in the construction of steel vessels propelled by steam and a decrease in that of unrigged steel vessels. In 1916 the value of the former class of vessels amounted to \$2,922,566, an increase over 1914 of \$1,956,064, or 202.4 per cent. The decrease in the value of the latter class of vessels was \$232,930, or 70.2 per cent. The largest relative increases are shown in the value of wooden vessels constructed and launched in 1916, the increases over 1914 being as follows: Wooden vessels propelled by steam, 307.4 per cent; propelled by motors, 361.5 per cent; unrigged, 251.3 per cent.

The Government shipyards did a large amount of construction work in 1916 on vessels not launched during the year, the value of such work amounting to

\$5,435,153. More than 98 per cent of it was done on steel vessels, and nearly all on battleships, destroyers, and submarines, in the three navy yards located at Brooklyn, N. Y., Portsmouth, N. H., and Mare Island, Calif.

Summary by states.—Tables 4 and 5 summarize the more important statistics of the shipbuilding industry by states for 1916 and 1914, respectively, the states being arranged according to the value of the products. Percentages of increase or decrease for the period from 1914 to 1916 are given in the former table, and for each five-year period from 1899 to 1914 in the latter table. Some of the states, for which data can not be shown separately without disclosing the operations of individual establishments, ranked higher than some of those named in the tables.

Table 4

Table 4	SHIPBUILDING, INCLUDING BOAT BUILDING: 1916.												PER CENT OF INCREASE. ¹			
STATE.	Number of establishments.	Wage earners.			Value of products.				Value added by manufacture.				Wage earners (average number) 1914-1916.	Value of products 1914-1916.	Value added by manufacture 1914-1916.	
		Average number.	Per cent distribution.	Rank.		Amount.	Per cent distribution.	Rank.		Amount.	Per cent distribution.	Rank.				
				1916	1914			1916	1914			1916				1914
United States.....	1,137	72,497	100.0	.....	.....	\$185,852,192	100.0	.....	.....	\$96,583,362	100.0	.....	.....	63.0	109.6	92.8
New York.....	200	9,928	13.7	1	2	31,357,645	16.9	1	1	19,827,785	20.5	1	1	63.4	120.9	119.8
New Jersey.....	76	7,777	10.7	2	1	20,311,529	10.9	2	2	10,407,893	10.8	2	2	23.0	71.2	67.2
California.....	50	7,113	9.8	4	6	19,777,911	10.6	3	6	9,533,318	9.9	3	4	105.8	144.1	106.5
Pennsylvania.....	30	6,440	8.9	5	4	16,816,071	9.1	4	3	7,563,887	7.8	4	3	34.9	76.3	59.5
Maryland.....	50	5,326	7.3	6	8	12,205,557	6.6	5	8	6,360,889	6.6	5	8	115.8	170.0	162.9
Massachusetts.....	85	4,373	6.0	8	5	12,185,354	6.6	6	4	5,252,662	5.4	8	5	.....	.....	.....
Ohio.....	32	5,059	7.0	7	7	12,160,007	6.5	7	7	6,083,255	6.3	6	7	75.7	157.8	116.6
Washington.....	57	3,744	5.2	9	9	10,829,812	5.8	9	9	4,323,909	4.5	10	7	159.3	249.2	104.5
Connecticut.....	31	1,312	1.8	13	16	6,217,274	3.3	10	12	4,980,719	5.2	9	12	155.3	273.3	276.4
Michigan.....	55	2,225	3.1	10	10	5,637,103	3.0	11	10	2,517,300	2.6	11	10	76.4	99.7	61.0
Maine.....	100	1,857	2.6	12	11	4,882,131	2.6	12	11	2,306,326	2.4	12	11	.....	.....	.....
Delaware.....	9	1,938	2.7	11	12	4,328,002	2.3	13	14	1,732,165	1.8	14	16	.....	.....	.....
Wisconsin.....	30	1,250	1.7	15	13	3,826,847	2.1	14	13	2,214,902	2.3	13	14	79.9	205.1	175.9
Oregon.....	26	1,003	1.4	17	22	2,915,346	1.6	15	21	1,304,030	1.4	16	20	.....	.....	.....
Louisiana.....	26	1,306	1.8	14	14	2,606,767	1.4	16	16	1,572,215	1.6	15	15	.....	.....	.....
Florida.....	57	1,172	1.6	16	17	1,795,519	1.0	17	17	886,326	0.9	18	17	.....	.....	.....
Rhode Island.....	14	616	0.8	18	15	1,523,614	0.8	18	15	1,122,480	1.2	17	13	.....	.....	.....
Alabama.....	8	541	0.7	20	18	1,048,578	0.6	19	25	650,303	0.7	19	23	16.6	323.4	277.6
Illinois.....	18	598	0.8	19	19	760,307	0.4	20	18	492,244	0.5	20	18	.....	.....	.....
Texas.....	14	250	0.3	21	21	515,972	0.3	21	20	306,448	0.3	21	22	48.8	9.0	57.3
Indiana.....	10	184	0.2	24	20	463,069	0.2	22	19	172,154	0.2	25	19	-18.2	-8.5	-27.9
Georgia.....	7	216	0.3	22	33	454,390	0.2	23	34	236,448	0.2	22	34	.....	.....	.....
West Virginia.....	7	202	0.3	23	23	308,872	0.2	24	24	172,450	0.2	24	25	.....	.....	.....
Mississippi.....	18	118	0.2	28	28	304,578	0.2	25	28	184,909	0.2	23	28	.....	.....	.....
Kentucky.....	17	168	0.2	25	26	279,168	0.2	26	26	138,849	0.1	28	26	.....	25.9	59.2
Minnesota.....	28	115	0.2	29	24	269,256	0.1	27	22	150,173	0.2	26	24	-8.0	-15.1	-5.9
North Carolina.....	12	141	0.2	27	27	188,640	0.1	29	27	144,988	0.2	27	27	.....	.....	.....
Iowa.....	10	26	(²)	32	25	83,199	(²)	30	23	38,200	(²)	30	21	.....	.....	.....
New Hampshire.....	6	17	(²)	35	32	47,952	(²)	31	29	35,131	(²)	31	29	.....	.....	.....
Tennessee.....	4	43	0.1	30	29	35,143	(²)	33	30	22,577	(²)	34	31	.....	.....	.....
Vermont.....	4	25	(²)	37	35	33,521	(²)	34	35	27,140	(²)	33	35	.....	.....	.....
Arkansas.....	4	.....	(²)	37	.....	8,945	(²)	36	.....	5,145	(²)	37	.....	.....	.....	.....
All other States.....	42	7,414	10.2	.....	.....	11,674,113	6.3	.....	.....	5,816,142	6.0	.....	.....	.....	.....	.....

¹ Percentages are based on figures in Table 35; a minus sign (—) denotes decrease. Percentages are omitted where base is less than 100 for wage earners or less than \$100,000 for value of products or value added by manufacture, or where comparable figures can not be given.

² Less than one-tenth of 1 per cent.

New York, the most important state in the industry, reported in 1914 nearly twice, and in 1916 just double the number of establishments as Maine, the second state in rank in this respect. In 1914 the seven states next in rank in number of establishments were New Jersey, Massachusetts, Florida, Washington, Michigan, California, and Maryland in the order named; this same order prevailed in 1916, except that Massachusetts supplanted New Jersey in third place, Washington equaled Florida, and Maryland equaled

California. These nine states had 67 per cent of all shipbuilding establishments in 1914, and 64.2 per cent in 1916. Although individually Maryland gained eight establishments and Massachusetts gained one, the nine states combined lost 39 establishments between 1914 and 1916. The states making the largest relative gains in new shipbuilding plants during this period were Louisiana, Maryland, Kentucky, Mississippi, and Oregon. These five states show an increase of 34 establishments.

Table 5

SHIPBUILDING, INCLUDING BOAT BUILDING: 1914.

PER CENT OF INCREASE.¹

STATE.	Number of establishments.	Wage earners.			Value of products.			Value added by manufacture.			Wage earners (average number).			Value of products.			Value added by manufacture.		
		Average number.	Per cent distribution.	Rank.	Amount.	Per cent distribution.	Rank.	Amount.	Per cent distribution.	Rank.	1909-1914	1909-1909	1899-1904	1909-1914	1904-1909	1899-1904	1909-1914	1904-1909	1899-1904
United States....	1,147	44,489	100.0	.....	\$88,682,071	100.0	.....	\$50,085,101	100.0	.....	9.8	-20.2	8.6	20.9	-11.4	11.1	18.8	-7.0	10.3
New York.....	207	6,076	13.7	2	14,195,298	16.0	1	9,022,520	18.0	1	7.7	-12.2	15.4	24.3	1.3	30.3	20.4	3.0	31.5
New Jersey.....	85	6,324	14.2	1	11,860,965	13.4	2	6,224,671	12.4	2	29.9	0.1	69.2	34.2	14.3	60.8	35.6	7.5	49.4
Pennsylvania.....	33	4,773	10.7	4	9,539,865	10.8	3	4,742,590	9.5	3	34.1	-45.4	-8.0	64.4	-40.2	-28.7	36.7	-32.6	-29.7
California.....	52	3,457	7.8	6	8,104,033	9.1	5	4,617,449	9.2	4	87.5	.....	.....	96.1	.....	.....	69.5	.....	.....
Ohio.....	29	2,879	6.5	7	4,716,787	5.3	7	2,808,207	5.6	7	-10.0	.....	-16.9	.....	.....	.....	12.6	.....	.....
Maryland.....	42	2,468	5.5	8	4,521,169	5.1	8	2,419,339	4.8	8	10	37.6	-35.3	7.4	27.9	-22.2	10.3	43.5	-38.8
Washington.....	64	1,444	3.2	9	3,101,446	3.5	9	2,114,583	4.2	9	94.1	.....	.....	100.1	.....	.....	114.1	.....	.....
Michigan.....	62	1,261	2.8	10	2,822,557	3.2	10	1,563,814	3.1	10	-46.2	17.3	-31.5	-43.9	69.3	-32.9	-38.5	34.3	-15.2
Connecticut.....	37	614	1.2	16	1,665,293	1.9	12	1,323,092	2.6	12	20.4	-78.6	118.4	124.4	-83.7	271.6	209.8	-75.6	220.5
Wisconsin.....	34	695	1.6	13	1,254,088	1.4	13	802,933	1.6	14	-23.3	.....	.....	-34.0	.....	.....	-25.7	.....	.....
Indiana.....	9	225	0.5	20	506,362	0.6	19	238,891	0.5	19	-11.1	-16.2	.....	35.2	-21.5	.....	81.9	-49.0	4.1
Texas.....	14	168	0.4	21	473,524	0.5	20	194,874	0.4	22	.....	.....	.....	.....	.....	.....	.....	.....	.....
Minnesota.....	30	125	0.3	24	317,111	0.4	22	159,617	0.3	24	-40.2	-6.7	.....	-16.0	10.2	.....	-27.4	-8.8	72.7
Kentucky.....	11	90	0.2	26	221,788	0.3	26	87,223	0.2	26	-42.7	36.5	10.6	-18.2	79.5	.....	-24.7	12.6	.....
New Hampshire.....	7	14	(?)	32	38,525	(?)	29	26,257	0.1	29	.....	.....	.....	.....	.....	.....	.....	.....	.....
Georgia.....	4	14	(?)	33	15,840	(?)	34	11,503	(?)	34	.....	.....	.....	.....	.....	.....	.....	.....	.....
All other states.....	427	13,962	31.4	.....	25,327,420	28.6	.....	13,727,538	27.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

¹ Percentages are based on figures in Table 35; a minus sign (-) denotes decrease. Percentages are omitted where base is less than 100 for wage earners, or less than \$100,000 for value of products, or value added by manufacture, or where comparable figures can not be given.

² Less than one-tenth of 1 per cent.

In 1916 the value of products for New York, the leading state, equaled 16.9 per cent of the total for the United States, as against 16 per cent in 1914, and exceeded the value of products for New Jersey, the state second in importance, by 54.4 per cent; California, Pennsylvania, Maryland, Massachusetts, Ohio, and Washington ranked next in the order named. New York and New Jersey held the same rank in 1916 as in 1914 and 1909, first and second, respectively. Pennsylvania, which was third in 1914, fell to fourth place in 1916, and Massachusetts, which was fourth in 1914, ranked sixth in 1916. California advanced from eighth place in 1909 to fifth in 1914 and to third in 1916, and Maryland from ninth in 1909 to eighth in 1914 and to fifth in 1916. Ohio and Washington held the same rank in 1916 as in 1914, seventh and ninth, respectively. These eight states combined reported, in 1916, 73 per cent of the total value of products for the industry in the United States, and 71.8 per cent in the value added by manufacture.

An increase of 63 per cent in average number of wage earners was reported for the industry as a whole in 1916 as compared with 1914, and an increase of 9.8 per cent in 1914 as compared with 1909. Of the states shown in Tables 4 and 5, the highest percentages of gain in 1914 were reported for Washington and California, amounting to 94.1 per cent and 87.5 per cent, respectively, while in 1916 Washington, Connecticut, Maryland, and California each showed an increase of more than 100 per cent, while the increase for Oregon was much greater. The states showing decreases in the number of wage earners in 1914 are Michigan, Kentucky, Minnesota, Wisconsin, Indiana, and Ohio; and in 1916, Iowa, Indiana, and Minnesota.

The states reporting reductions in the average number of wage earners also show decreases in the value of products and in value added by manufacture for both 1914 and 1916, except that for 1914, as compared with 1909, Ohio showed an increase of 12.6 per cent in value added by manufacture and Indiana, an increase of 35.2 per cent in value of products and 81.9 per cent in value added by manufacture.

In value of products, the shipbuilding industry in the United States as a whole showed an increase of 109.6 per cent between 1914 and 1916. The percentage of increase was greatest for the state of Oregon, Alabama following with the next largest increase, while of the states shown in Table 4, Connecticut, Washington, and Wisconsin each shows a gain of over 200 per cent. Other states prominent in the shipbuilding industry—California, Maryland, New York, and Ohio—each made a gain of over 100 per cent in value of products.

Coast divisions and inland waters.—Table 6 shows for 1916 and 1914 the more important statistics for the shipbuilding industry as a whole and for each of its branches, by coastal areas and inland waters, designated as North Atlantic, South Atlantic, Gulf, Pacific, Great Lakes, Mississippi River and its tributaries, and Other inland waters.

At both the censuses of 1914 and 1916 over one-half of the aggregate value of all products of the shipbuilding industry was reported by establishments located in the North Atlantic division, which embraces the Atlantic seaboard and the navigable rivers of the New England states, and of New York, New Jersey, Pennsylvania, and Delaware. The value of products in this division for 1916 was \$93,307,475,

as compared with \$48,897,075 for 1914, an increase of \$44,410,400, or 90.8 per cent. The value of work done on steel vessels in this district during 1916 was more than three and a third times greater than the value of work on wooden vessels.

The Pacific division, made up of the states of California, Oregon, and Washington, stands next in rank in value of products. This division has advanced from a position of comparatively small importance to a prominent place in the shipbuilding industry. There was an increase in the total value of products of \$21,983,396, or 190.5 per cent, during the period 1914-1916. Of the total products, \$33,523,069, reported for the industry in this division in 1916, \$26,210,745 was for work on steel vessels, which is nearly three times the amount reported for the same class of products in 1914.

The South Atlantic division includes Maryland, the District of Columbia, Virginia, North Carolina, South Carolina, Georgia, and the east coast of Florida. The total value of shipbuilding in this division aggregated \$25,501,945 in 1916, which was an increase over 1914 of \$12,537,415, or 96.7 per cent.

The shipbuilding industry in the Great Lakes division, which is composed of the territory bordering on the Great Lakes and the St. Lawrence River,

shows remarkable development between 1914 and 1916. In 1914 the value of products for the industry as a whole was \$9,270,488, but in 1916 it had advanced to \$22,094,456, an increase of \$12,823,968, or 138.3 per cent. Steel shipbuilding was by far the more important branch of the industry in both 1914 and 1916, and in the latter year contributed 90.2 per cent of the value of products.

The division designated "Mississippi River and its tributaries" includes establishments located on these rivers, while the Gulf division includes the establishments located on the Gulf of Mexico and on waters tributary to the Gulf, other than the Mississippi River, in the states of Florida, Alabama, Mississippi, Louisiana, and Texas. These two divisions combined reported in 1916 an aggregate of \$10,063,777, an increase over 1914 of \$5,337,732. In both divisions the construction of wooden vessels predominated.

The division "Other inland waters" includes the establishments, chiefly boat-building plants, located on inland lakes or rivers connecting such bodies of water. Establishments located on canals and engaged in the building of canal boats are included in this group. The value of work done in this division, chiefly on small boats, aggregated \$1,361,470 in 1916, as compared with \$1,284,260 in 1914.

Table 6

	Census year.	United States.	COAST DIVISIONS.				INLAND WATERS.		
			North Atlantic.	South Atlantic.	Gulf.	Pacific.	Great Lakes.	Mississippi River and its tributaries.	Other inland waters.
Number of establishments.....	1916	1,137	459	126	90	133	131	101	97
	1914	1,147	485	115	84	137	142	75	139
Steel shipbuilding.....	1916	109	42	14	11	14	19	9	.....
	1914	79	31	9	4	12	16	6	1
New construction.....	1916	72	25	6	7	8	18	8	.....
	1914	46	15	5	3	6	11	6	.....
Repair work only.....	1916	37	17	8	4	6	1	1	.....
	1914	133	16	4	1	6	5	.....	1
Wooden shipbuilding and boat building.....	1916	1,028	417	112	79	119	112	92	97
	1914	1,068	454	106	80	125	126	69	108
New construction.....	1916	339	127	42	28	69	22	37	14
	1914	273	102	32	29	57	28	16	9
Repair work only.....	1916	248	87	38	32	20	32	23	16
	1914	179	71	29	24	14	17	16	8
Boats less than 5 gross tons.....	1916	416	187	32	18	27	53	31	63
	1914	588	263	45	27	49	81	36	87
Masts, spars, oars, and the rigging of vessels ..	1916	25	16	.....	1	3	.....	1	4
	1914	28	18	.....	.....	5	.....	1	4
Persons engaged.....	1916	78,333	35,604	14,753	2,697	12,614	9,567	2,419	679
	1914	48,667	25,364	8,213	1,580	5,554	5,570	1,553	833
Steel shipbuilding.....	1916	59,802	27,182	12,915	1,084	9,714	8,324	583	.....
	1914	35,664	18,872	6,727	1,288	4,441	4,465	469	411
Wooden shipbuilding and boat building.....	1916	18,531	8,422	1,838	1,613	2,900	1,243	1,836	679
	1914	13,003	6,492	1,486	1,292	1,113	1,105	1,093	422
Proprietors and firm members.....	1916	1,103	448	137	77	123	120	102	96
	1914	1,192	492	125	87	149	135	83	121
Steel shipbuilding.....	1916	35	13	9	4	1	8	.....	.....
	1914	24	12	2	3	2	5	.....	.....
Wooden shipbuilding and boat building.....	1916	1,068	435	128	73	122	112	102	96
	1914	1,168	480	123	84	147	130	83	121
Salaried employees.....	1916	4,733	2,442	799	137	631	461	201	62
	1914	2,986	1,750	351	69	340	315	105	56
Steel shipbuilding.....	1916	3,530	1,901	660	64	473	359	76	.....
	1914	2,132	1,266	271	33	273	218	39	32
Wooden shipbuilding and boat building.....	1916	1,203	541	139	73	158	105	125	62
	1914	854	484	80	36	67	97	66	24
Wage earners.....	1916	72,497	32,714	13,817	2,483	11,860	8,986	2,116	521
	1914	44,489	23,122	7,737	1,424	5,665	5,120	1,365	656
Steel shipbuilding.....	1916	56,237	25,268	12,246	1,016	9,240	7,960	507	.....
	1914	33,508	17,594	6,454	252	4,166	4,242	421	379
Wooden shipbuilding and boat building.....	1916	16,260	7,446	1,571	1,467	2,620	1,026	1,609	521
	1914	10,981	5,528	1,283	1,172	899	878	944	277

¹ Includes 4 establishments making boats under 5 tons, and 1 making masts, spars, oars, and the rigging of vessels.

Table 6—Continued.

	Census year.	United States.	COAST DIVISIONS.				INLAND WATERS.		
			North Atlantic.	South Atlantic.	Gulf.	Pacific.	Great Lakes.	Mississippi River and its tributaries.	Other inland waters.
Capital.....	1916	\$243,217,869	\$130,407,981	\$35,444,646	\$6,448,055	\$28,953,175	\$36,024,371	\$4,570,879	\$1,368,762
	1914	156,059,938	84,651,964	25,269,023	1,950,331	13,184,213	20,615,164	2,831,203	1,558,040
Steel shipbuilding.....	1916	209,517,898	113,759,845	32,295,177	4,306,259	24,425,454	32,916,718	1,814,445	.....
	1914	132,712,414	71,211,793	22,863,261	709,968	11,178,169	24,697,843	1,139,909	911,471
Wooden shipbuilding and boat building.....	1916	33,699,971	16,648,136	3,149,469	2,141,796	4,527,721	3,107,653	2,756,434	1,368,762
	1914	23,347,524	13,440,171	2,405,762	1,240,363	2,006,044	1,917,321	1,691,294	646,569
Salaries and wages.....	1916	67,526,623	33,325,236	10,232,832	1,746,410	12,370,558	7,649,783	1,804,818	396,986
	1914	37,689,965	20,688,781	5,355,950	862,965	5,151,176	4,129,986	1,027,998	473,199
Steel shipbuilding.....	1916	53,367,771	26,379,108	9,130,089	726,396	9,851,894	6,711,860	568,424	.....
	1914	28,752,404	15,599,035	4,528,100	249,578	4,295,921	3,436,564	374,166	269,040
Wooden shipbuilding and boat building.....	1916	14,158,852	6,946,128	1,102,743	1,020,014	2,518,664	937,923	1,236,394	396,986
	1914	8,937,561	5,089,746	827,850	613,387	855,255	693,422	653,832	204,060
Salaries.....	1916	6,950,722	3,815,617	1,021,036	185,580	882,818	690,457	292,196	63,018
	1914	4,758,809	2,835,896	453,901	109,950	644,724	478,355	173,563	62,420
Steel shipbuilding.....	1916	5,347,648	2,920,792	899,252	106,203	691,420	566,462	157,519	.....
	1914	3,586,612	2,104,968	347,187	51,264	567,155	373,750	100,789	41,499
Wooden shipbuilding and boat building.....	1916	1,603,074	888,825	121,784	79,377	191,398	123,995	134,677	63,018
	1914	1,172,197	730,928	106,714	58,686	77,569	104,605	72,774	20,921
Wages.....	1916	60,575,901	29,509,619	9,211,796	1,560,830	11,487,740	6,959,326	1,512,622	333,968
	1914	32,931,156	17,852,885	4,902,049	753,015	4,506,452	3,436,631	854,435	410,689
Steel shipbuilding.....	1916	48,020,123	23,452,316	8,230,837	620,193	9,160,474	6,145,398	410,905	.....
	1914	25,165,792	13,494,067	4,180,913	198,314	3,728,766	3,002,814	273,377	227,541
Wooden shipbuilding and boat building.....	1916	12,555,778	6,057,303	990,959	940,637	2,327,266	813,928	1,101,717	333,968
	1914	7,765,364	4,358,818	721,136	554,701	777,686	588,817	581,058	183,148
Paid for contract work.....	1916	4,092,789	3,642,561	9,378	45,067	340,773	42,984	10,045	1,981
	1914	531,779	378,500	3,850	32,013	66,906	6,248	41,298	2,904
Steel shipbuilding.....	1916	3,911,332	3,557,071	.....	37,694	273,702	38,990	3,875	.....
	1914	442,135	316,533	.....	27,115	60,585	.....	37,902	.....
Wooden shipbuilding and boat building.....	1916	181,457	85,490	9,378	7,373	67,071	3,994	6,170	1,981
	1914	89,644	62,027	3,850	4,898	6,321	6,248	3,396	2,904
Cost of materials.....	1916	89,268,830	42,804,947	12,474,463	2,053,328	18,361,812	10,259,172	2,656,660	658,448
	1914	38,596,970	21,402,078	6,398,675	818,894	4,588,205	3,540,673	1,258,203	590,242
Steel shipbuilding.....	1916	69,961,072	32,503,724	11,330,553	924,477	14,889,674	9,416,573	896,071	.....
	1914	29,268,727	16,138,273	5,694,961	90,494	3,748,176	2,792,432	452,873	352,518
Wooden shipbuilding and boat building.....	1916	19,307,758	10,301,223	1,143,910	1,128,851	3,472,138	842,599	1,760,589	658,448
	1914	9,327,243	5,263,805	703,714	728,400	840,029	748,241	805,330	237,724
Value of products.....	1916	185,852,192	93,307,475	25,501,945	5,029,103	33,523,069	22,094,456	5,034,674	1,361,470
	1914	88,682,071	48,897,075	12,964,530	2,102,610	11,539,673	9,270,488	2,623,435	1,284,260
Steel shipbuilding.....	1916	144,619,111	71,967,166	22,694,150	2,055,320	26,210,745	19,918,911	1,772,819	.....
	1914	66,216,692	36,039,370	11,113,526	433,956	9,376,847	7,552,601	1,020,487	679,965
Wooden shipbuilding and boat building.....	1916	41,233,081	21,340,309	2,807,795	2,973,783	7,312,324	2,175,545	3,261,855	1,361,470
	1914	22,465,379	12,857,705	1,851,004	1,668,654	2,162,826	1,717,887	1,602,948	604,355
Work done during the year on new vessels.....	1916	101,531,210	41,770,276	17,013,871	1,683,473	26,335,563	13,101,506	1,560,337	66,184
	1914	42,545,445	22,827,958	8,964,228	1,017,254	5,432,486	3,112,927	1,151,894	38,698
Launched.....	1916	50,424,700	16,967,190	7,918,211	1,208,914	14,097,159	8,811,264	1,395,862	31,100
	1914	27,126,809	13,542,501	4,447,050	975,094	4,134,239	3,054,739	937,773	35,413
Not launched.....	1916	51,106,510	24,803,086	9,095,660	479,559	12,238,404	4,290,242	164,475	35,084
	1914	15,418,636	9,285,457	4,517,178	42,160	1,298,247	58,188	214,121	3,285
Steel vessels.....	1916	85,418,006	34,670,071	15,885,632	282,782	20,797,266	12,703,430	1,078,825	.....
	1914	36,295,458	20,079,151	8,539,307	119,900	4,221,113	2,638,339	697,648	.....
Launched.....	1916	40,156,820	11,361,080	7,443,771	180,811	11,665,697	8,556,913	918,548	.....
	1914	21,540,428	11,162,435	4,074,329	99,900	3,063,024	2,625,398	515,342	.....
Not launched.....	1916	45,261,186	23,308,991	8,441,861	101,971	9,101,569	4,146,517	160,277	.....
	1914	14,755,030	8,916,716	4,464,978	20,000	1,158,099	12,941	182,306	.....
Wooden vessels.....	1916	16,113,204	7,100,205	1,128,239	1,400,691	5,538,297	398,076	481,512	66,184
	1914	6,249,987	2,748,807	424,921	897,354	1,211,373	474,588	454,246	38,698
Launched.....	1916	10,267,880	5,606,110	474,440	1,023,103	2,401,462	254,351	477,314	31,100
	1914	5,586,381	2,380,066	372,721	875,194	1,071,215	429,341	422,431	35,413
Not launched.....	1916	5,845,324	1,494,095	653,799	377,588	3,136,835	143,725	4,198	35,084
	1914	663,606	368,741	52,200	22,160	140,158	45,247	31,815	3,285
Repair work on vessels.....	1916	63,508,514	39,961,717	7,280,250	3,133,266	5,347,079	6,465,800	1,063,853	256,549
	1914	32,835,212	17,527,151	3,280,157	995,385	4,894,438	4,877,278	1,078,064	182,739
Steel vessels.....	1916	44,821,223	28,023,310	5,757,141	1,888,057	3,909,146	(1)	(1)	.....
	1914	20,537,928	9,858,707	2,087,200	(1)	4,033,560	(1)	(1)	.....
Wooden vessels.....	1916	18,687,291	11,938,407	1,523,109	1,245,209	1,437,933	(1)	(1)	256,549
	1914	12,297,284	7,668,444	1,192,957	(1)	860,848	(1)	(1)	182,739
Boats less than 5 gross tons.....	1916	3,739,725	1,638,467	87,692	67,473	298,003	476,024	327,655	844,411
	1914	3,788,689	2,074,313	121,414	69,962	324,276	505,972	183,691	529,061
All other products.....	1916	17,072,743	9,937,015	1,120,132	144,891	1,542,424	2,051,126	2,082,829	194,326
	1914	9,512,725	6,467,653	598,731	20,009	888,473	774,311	229,786	593,762
Value added by manufacture.....	1916	96,583,362	50,502,528	13,027,482	2,975,775	15,161,257	11,835,284	2,378,014	703,022
	1914	50,085,101	27,494,997	6,565,855	1,283,716	6,951,468	5,720,815	1,365,232	694,018
Steel shipbuilding.....	1916	74,658,039	39,463,442	11,363,597	1,130,843	11,321,071	10,502,338	876,748	.....
	1914	36,946,965	19,901,097	5,418,565	343,462	5,628,671	4,760,169	567,614	327,387
Wooden shipbuilding and boat building.....	1916	21,925,323	11,039,086	1,663,885	1,844,932	3,840,186	1,332,946	1,501,266	703,022
	1914	13,138,136	7,593,900	1,147,290	940,254	1,322,797	969,646	797,618	366,631

¹ Figures not shown separately, to avoid disclosure of individual operations.

During 1916 the shipbuilding industry gave employment to 72,497 wage earners, as compared with 44,489, in 1914. In 1916 the North Atlantic division reported 45.1 per cent of the total number of wage earners; the South Atlantic, 19.1 per cent; the Pacific, 16.4 per cent; and the Great Lakes, 12.4 per cent. Nearly 80 per cent of the wage earners were engaged in the construction and repair of steel vessels.

Table 7 shows the number of shipbuilding establishments in the United States for 1916 and 1914, dis-

tributed according to the geographic divisions, states, and by coast divisions and inland waters. A number of the states reported establishments classified in two or more of the water divisions. For example, Louisiana reported establishments classified in the "Gulf," "Mississippi River and its tributaries," and "Other inland waters"; and Pennsylvania reported establishments classified in the "North Atlantic," "Great Lakes," "Mississippi River and its tributaries," and "Other inland waters" divisions.

Table 7		NUMBER OF ESTABLISHMENTS.											NUMBER OF ESTABLISHMENTS.											NUMBER OF ESTABLISHMENTS.											
		GEOGRAPHIC DIVISION AND STATE.	Census year.	United States.	Coast divisions.				Inland waters.				GEOGRAPHIC DIVISION AND STATE.	Census year.	United States.	Coast divisions.				Inland waters.				GEOGRAPHIC DIVISION AND STATE.	Census year.	United States.	Coast divisions.				Inland waters.				
					North Atlantic.	South Atlantic.	Gulf.	Pacific.	Great Lakes.	Mississippi River, etc.						Other.	North Atlantic.	South Atlantic.	Gulf.	Pacific.	Great Lakes.						Mississippi River, etc.	Other.	North Atlantic.	South Atlantic.	Gulf.	Pacific.	Great Lakes.	Mississippi River, etc.	Other.
United States.....	1916	1,137	459	126	90	133	131	101	97	South Atlantic.....	1916	176	9	126	33							7	1												
	1914	1,147	485	115	84	137	142	75	109		1914	169	8	115	40							5	1												
New England.....	1916	240	218						22	Delaware.....	1916	9	9																						
	1914	252	231						21		1914	8	8																						
Maine.....	1916	100	89						11	Maryland.....	1916	50		49									1												
	1914	107	97						10		1914	42		41								1													
New Hampshire.....	1916	6							6	District of Colum- bia.....	1916	2		2																					
	1914	7							7		1914	2		2																					
Vermont.....	1916	4							4	Virginia.....	1916	30		30																					
	1914	2							2		1914	29		29																					
Massachusetts.....	1916	85	84						1	West Virginia.....	1916	7										7													
	1914	84	82						2		1914	5									5														
Rhode Island.....	1916	14	14							North Carolina.....	1916	12		12																					
	1914	15	15								1914	11		11																					
Connecticut.....	1916	31	31							South Carolina.....	1916	2		2																					
	1914	37	37								1914	2		2																					
Middle Atlantic.....	1916	306	232					39	10	Georgia.....	1916	7		7																					
	1914	325	246					44	10		1914	4		4																					
New York.....	1916	200	142					37		Florida.....	1916	57		24	33																				
	1914	207	144					40	25		1914	66		26	40																				
New Jersey.....	1916	76	74					.....	2	East South Central.....	1916	47			21							26													
	1914	85	83					.....	2		1914	30			16						13	1													
Pennsylvania.....	1916	30	16					2	10	Kentucky.....	1916	17										17													
	1914	33	19					4	.....		1914	11										10													
East North Central.....	1916	145						89	33	Tennessee.....	1916	4										4													
	1914	156						95	28		1914	3										3													
Ohio.....	1916	32						15	16	Alabama.....	1916	8		7								1													
	1914	29						17	9		1914	4		4								.....													
Indiana.....	1916	10						.....	1	Mississippi.....	1916	18		14								4													
	1914	9						.....	2		1914	12		12								.....													
Illinois.....	1916	18						9	6	West South Central.....	1916	44			36							3													
	1914	22						9	10		1914	31			28							1													
Michigan.....	1916	55						50	.....	Arkansas.....	1916	4										.....													
	1914	62						54	8		1914	.....										4													
Wisconsin.....	1916	30						15	2	Louisiana.....	1916	26			22							3													
	1914	34						15	2		1914	17			14							1													
West North Central.....	1916	44						.....	13	Texas.....	1916	14			14							.....													
	1914	45						.....	17		1914	14			14							2													
Minnesota.....	1916	28						3	10	Mountain.....	1916	2										2													
	1914	30						3	8		1914	2										2													
Iowa.....	1916	10						.....	4	Idaho.....	1916	2										2													
	1914	11						.....	4		1914	2										2													
Missouri.....	1916	5						.....	5	Pacific.....	1916	133				133						.....													
	1914	3						.....	1		1914	137				137						.....													
South Dakota.....	1916	1						.....	1	Washington.....	1916	57				57						.....													
	1914	1						.....	1		1914	64				64						.....													
										Oregon.....	1916	26				26						.....													
											1914	21				21						.....													
										California.....	1916	50				50						.....													
											1914	52				52						.....													

Table 8

Table 8		PERSONS ENGAGED IN THE INDUSTRY.						PERSONS ENGAGED IN THE INDUSTRY.							
		Cen- sus year.	Total.	Male.	Fe- male.	Per cent of total.		Cen- sus year.	Total.	Male.	Fe- male.	Per cent of total.			
						Male.	Fe- male.					Male.	Fe- male.		
INDUSTRY AND CLASS.								INDUSTRY AND CLASS.							
SHIPBUILDING, INCLUDING BOAT BUILDING.		1916	78,333	77,802	531	99.3	0.7	SHIPBUILDING, STEEL—continued.							
		1914	48,667	48,314	353	99.3	0.7	Clerks and other subordinate sala- ried employees.		1916	2,558	2,335	223	91.3	8.7
		1909	44,949	44,597	352	99.2	0.8			1914	1,571	1,447	124	92.1	7.9
Proprietors and officials.....		1916	2,653	2,605	48	98.2	1.8			1909	1,407	1,302	105	92.5	7.5
		1914	2,187	2,154	33	98.5	1.5	Wage earners (average number).....		1916	56,237	56,138	99	99.8	0.2
		1909	2,471	2,447	24	99.0	1.0			1914	33,508	33,441	67	99.8	0.2
Proprietors and firm members...		1916	1,103	1,062	41	96.3	3.7	16 years of age and over.....		1909	28,143	28,097	46	99.8	0.2
		1914	1,192	1,163	29	97.6	2.4			1916	55,859	55,760	99	99.8	0.2
		1909	1,463	1,440	23	98.4	1.6	Under 16 years of age.....		1914	33,323	33,257	66	99.8	0.2
Salaried officers of corporations..		1916	399	394	5	98.7	1.3			1909	27,794	27,748	46	99.8	0.2
		1914	323	320	3	99.1	0.9			1916	378	378	.....	100.0	.....
		1909	367	366	1	99.7	0.3			1914	185	184	1	99.5	0.5
Superintendents and managers..		1916	1,151	1,149	2	99.8	0.2	SHIPBUILDING, WOODEN, IN- CLUDING BOAT BUILDING.		1909	349	349	.....	100.0	.....
		1914	672	671	1	99.9	0.1			1916	18,531	18,326	205	98.9	1.1
		1909	641	641	.....	100.0	.....			1914	13,003	12,844	159	98.8	1.2
Clerks and other subordinate sala- ried employees.		1916	3,183	2,818	365	88.5	11.5	Proprietors and officials.....		1909	14,908	14,707	201	98.7	1.3
		1914	1,991	1,785	206	88.6	11.4			1916	1,646	1,602	44	97.3	2.7
		1909	1,972	1,706	266	86.5	13.5	Proprietors and firm members...		1914	1,602	1,572	30	98.1	1.9
Wage earners (average number).....		1916	72,497	72,379	118	99.8	0.2			1909	1,980	1,956	24	98.8	1.2
		1914	44,489	44,395	94	99.8	0.2	Salaried officers of corporations..		1916	1,068	1,029	39	96.3	3.7
		1909	40,506	40,444	62	99.8	0.2			1914	1,168	1,141	27	97.7	2.3
16 years of age and over.....		1916	72,097	71,979	118	99.8	0.2	Superintendents and managers..		1909	1,442	1,419	23	98.4	1.6
		1914	44,288	44,195	93	99.8	0.2			1916	205	201	4	98.0	2.0
		1909	40,135	40,073	62	99.8	0.2			1914	157	155	2	98.7	1.3
Under 16 years of age.....		1916	400	400	.....	100.0	.....	Clerks and other subordinate sala- ried employees.		1909	245	244	1	99.6	0.4
		1914	201	200	1	99.5	0.5			1916	373	372	1	99.7	0.3
		1909	371	371	.....	100.0	.....			1914	277	276	1	99.6	0.4
SHIPBUILDING, STEEL.....		1916	59,802	59,476	326	99.5	0.5	Wage earners (average number).....		1909	293	293	.....	100.0	.....
		1914	35,664	35,470	194	99.5	0.5			1916	625	483	142	77.3	22.7
		1909	30,041	29,890	151	99.5	0.5	16 years of age and over.....		1914	420	318	102	75.7	24.3
Proprietors and officials.....		1916	1,007	1,003	4	99.6	0.4	Under 16 years of age.....		1909	565	404	161	71.5	28.5
		1914	585	582	3	99.5	0.5			1916	16,260	16,241	19	99.9	0.1
		1909	491	491	.....	100.0	.....			1914	10,981	10,954	27	99.8	0.2
Proprietors and firm members...		1916	35	33	2	94.3	5.7			1909	12,363	12,347	16	99.9	0.1
		1914	24	22	2	91.7	8.3	16 years of age and over.....		1916	16,236	16,217	19	99.9	0.1
		1909	21	21	.....	100.0	.....	Under 16 years of age.....		1914	10,965	10,938	27	99.8	0.2
Salaried officers of corporations..		1916	194	193	1	99.5	0.5			1909	12,341	12,325	16	99.9	0.1
		1914	166	165	1	99.4	0.6			1916	24	24	.....	100.0	.....
		1909	122	122	.....	100.0	.....			1914	16	16	.....	100.0	.....
Superintendents and managers..		1916	778	777	1	99.9	0.1			1909	22	22	.....	100.0	.....
		1914	395	395	.....	100.0	.....								
		1909	348	348	.....	100.0	.....								

The average number of persons engaged in the industry as a whole during 1916 was 78,333 as compared with 48,667 in 1914 and 44,949 in 1909. Of these persons in 1916, 72,497, or 92.5 per cent, were wage earners; 2,653, or 3.4 per cent, proprietors and officials; and 3,183, or 4.1 per cent, clerks and other subordinate salaried employees. Of the total number of persons employed, 77,802, or 99.3 per cent, were males, and 531, or seven-tenths of 1 per cent, females. Most of the females were clerks, only 118 being wage earners. The average number of boys under 16 years of age was 400, and nearly all of these were employed

in steel shipbuilding. The greater prevalence of individual ownership in the wooden ship and boat building branch of the industry is shown by the fact that 5.8 per cent of the persons engaged were proprietors and firm members, while less than 1 per cent of the persons engaged in the steel branch of the industry belong to this class.

Table 9 shows the per cent of increase in the number of persons engaged in the industry, by occupational status and sex, for the periods 1909-1914 and 1914-1916, together with the per cent distribution for the three censuses.

Table 9

CLASS.	PERSONS ENGAGED IN THE INDUSTRY.														
	Per cent of increase. ¹						Per cent distribution.								
	1914-1916			1909-1914			Total.			Male.			Female.		
	Total.	Male.	Female.	Total.	Male.	Female.	1916	1914	1909	1916	1914	1909	1916	1914	1909
All classes.....	61.0	61.0	50.4	8.3	8.3	0.3	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Proprietors and officials.....	21.3	20.9	.....	-11.5	-12.0	.....	3.3	4.5	5.5	3.4	4.5	5.5	9.0	9.3	6.8
Proprietors and firm members....	-7.5	-8.7	.....	-18.5	-19.2	.....	1.4	2.4	3.3	1.4	2.4	3.2	7.7	8.2	6.5
Salaried officers of corporations....	23.5	23.1	.....	-12.0	-12.6	.....	0.5	0.7	0.8	0.5	0.7	0.8	0.9	0.8	0.3
Superintendents and managers....	71.3	71.2	.....	4.8	4.7	.....	1.5	1.4	1.4	1.5	1.4	1.5	0.4	0.3	.....
Clerks and other subordinate salaried employees.....	59.9	59.7	61.5	1.0	3.5	-15.0	4.1	4.1	4.4	3.6	3.6	3.8	68.7	64.0	75.6
Wage earners (average number).....	63.0	63.0	.....	9.8	9.8	.....	92.5	91.4	90.1	93.0	91.9	90.7	22.2	26.6	17.6
16 years of age and over.....	62.8	62.9	.....	10.3	10.3	.....	92.0	91.0	89.3	92.5	91.5	89.9	22.2	26.3	17.6
Under 16 years of age.....	99.0	100.0	.....	-45.8	-46.1	.....	0.5	0.4	0.8	0.5	0.4	0.8	.....	0.3	.....

¹ A minus sign (—) denotes decrease; percentages are omitted where base is less than 100.

The total number of persons engaged in the industry increased by 29,666, or 61 per cent, during the two-year period 1914-1916, as compared with an increase of only 3,718, or 8.3 per cent, for the five-year period 1909-1914.

The only class of persons employed which showed a decrease between 1914 and 1916 was proprietors and firm members, which decreased 7.5 per cent. The number of salaried officers of corporations and of superintendents and managers increased 23.5 per cent and 71.3 per cent, respectively, indicating an increase in the size of the establishments though the number of these decreased between 1914 and 1916. Wage earners 16 years of age and over represented 92 per cent of the total number of persons engaged in shipbuilding in 1916, 91 per cent in 1914, and 89.3 per cent in 1909. Though the number of wage earners under 16 years of age almost doubled between 1914 and 1916, they represented only five-tenths of 1 per cent of the total number of wage earners in 1916, four-tenths of 1 per cent in 1914, and eight-tenths of 1 per cent in 1909.

Wage earners employed, by months.—Table 10 presents the total number of wage earners employed in the shipbuilding industry on the 15th of each month, or the nearest representative day, for 1916, 1914, and 1909, and the average number employed during each month in 1904, together with the percentage which the number reported for each month forms of the greatest number reported for any month.

In 1916 the maximum number employed in the entire industry was 85,928 in December; in 1914, 49,567 in May; and in 1909 and 1904, 42,256 and 53,975, respectively, in April. The month of minimum employment was January in both 1916 and 1904; November, in 1914; and February, in 1909. For the steel shipbuilding branch the maximum number was employed in March in 1914, in December in 1909, and in April in 1904, while for the wooden ship and boat building branch of the industry for these years, May and June were the months of maximum employment. For these census years there was no general trend from the season of minimum employment to that of maximum, but for 1916, the maximum month of employment for the industry and the two branches was December, and an almost steady increase in the number employed is shown from the month of January to December. This fact is undoubtedly due to the great acceleration in the shipbuilding industry due to the war.

Table 10

INDUSTRY AND MONTH.	WAGE EARNERS IN THE INDUSTRY.							
	Number. ¹				Per cent of maximum.			
	1916	1914	1909	1904	1916	1914	1909	1904
SHIPBUILDING, INCLUDING BOAT BUILDING.								
January.....	59,433	47,038	38,516	47,476	69.2	94.9	91.1	88.0
February.....	61,615	45,776	37,565	47,790	71.7	92.4	88.9	88.5
March.....	64,782	48,534	39,922	49,982	75.4	97.9	94.5	92.6
April.....	67,801	48,941	42,256	53,975	78.9	98.7	100.0	100.0
May.....	70,157	49,567	42,244	53,944	81.6	100.0	99.9	99.9
June.....	73,251	48,610	41,600	53,585	85.2	98.1	98.7	99.3
July.....	72,788	46,164	40,190	52,141	84.7	98.1	95.1	96.6
August.....	74,259	43,606	39,149	51,637	86.4	88.0	92.6	95.7
September.....	77,069	39,870	40,283	51,214	89.7	80.4	95.3	94.9
October.....	79,281	39,162	41,151	50,209	92.3	79.0	97.4	93.0
November.....	83,600	37,843	41,023	48,980	97.3	76.3	97.1	90.7
December.....	85,928	38,757	42,075	48,115	100.0	78.2	99.6	89.1
SHIPBUILDING, STEEL.								
January.....	47,087	36,262	27,831	36,544	70.9	98.6	91.1	95.5
February.....	48,674	35,485	26,279	36,203	73.3	96.3	86.0	94.6
March.....	51,376	36,788	27,299	36,687	77.4	100.0	89.4	95.9
April.....	52,633	36,636	28,641	38,255	79.3	99.6	93.8	100.0
May.....	53,809	36,773	28,445	37,053	81.0	99.9	93.1	96.9
June.....	55,944	36,222	27,623	36,820	84.3	98.5	90.4	96.2
July.....	55,659	34,822	26,927	36,350	83.8	94.7	88.2	95.0
August.....	57,257	32,967	26,823	36,334	86.2	89.6	87.8	95.1
September.....	59,565	29,808	28,435	36,523	89.7	81.0	93.1	95.5
October.....	61,756	28,743	29,415	36,712	93.0	78.1	96.3	96.0
November.....	64,804	28,107	29,449	36,651	97.6	76.4	96.4	95.8
December.....	66,399	29,533	30,545	36,722	100.0	80.3	100.0	96.0
SHIPBUILDING, WOODEN, INCLUDING BOAT BUILDING.								
January.....	12,346	10,776	10,685	10,932	63.2	84.2	76.0	64.7
February.....	12,941	10,341	11,286	11,687	66.3	80.8	80.2	68.6
March.....	13,406	11,746	12,623	13,295	68.6	91.8	89.7	78.7
April.....	15,168	12,305	13,615	15,720	77.7	96.2	96.8	93.1
May.....	16,348	12,794	13,799	16,891	83.7	100.0	98.1	100.0
June.....	17,307	12,388	14,067	16,765	88.6	96.8	100.0	99.3
July.....	17,129	11,342	13,263	15,791	87.7	88.7	94.3	93.5
August.....	17,002	10,639	12,326	15,253	87.1	83.2	87.6	90.3
September.....	17,504	10,062	11,848	14,691	89.6	78.6	84.2	87.0
October.....	17,525	10,419	11,736	13,497	89.7	81.4	83.4	79.9
November.....	18,796	9,736	11,574	12,329	96.2	76.1	82.3	73.0
December.....	19,529	9,224	11,530	11,393	100.0	72.1	82.0	67.4

¹ The figures for 1916, 1914, and 1909 represent the number employed on the 15th of each month, or the nearest representative day; those for 1904, the average number employed during the month.

Table 11 gives the total average number of wage earners, and the number employed on the 15th of each month, or the nearest representative day, for the shipbuilding industry as a whole and for each of its branches, for 1916 and 1914. The table also shows for both years corresponding numbers for each state reporting 500 or more wage earners in 1916.

In 1914, the month of maximum employment in 13 of the 20 states shown in the table was a spring or early summer month or during the period from March to June, while in 1916 the month of greatest activity in 15 of the 20 states was in the latter part of the year—namely, from September to the end of the year. This again reflects war conditions in 1916.

New York, which ranked first in number of wage earners employed in 1916, showed December as the month of maximum employment; New Jersey, which

ranked second, and California, fourth, also reported the largest number employed in December. Virginia, which ranked third, showed the maximum

number for March. In 1914, the maximum number for New York was employed in May; for New Jersey, in June; for California and Virginia, in January.

Table 11

WAGE EARNERS: 1916 AND 1914.
[The month of maximum employment is indicated by **boldface** figures and that of minimum by *italic* figures.]

INDUSTRY AND STATE.	Census year.	Average number employed during year.	Number employed on 15th day of the month or nearest representative day.												Per cent minimum is of maximum.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
United States.....	1916	72,497	59,433	61,615	64,782	67,801	70,157	73,251	72,788	74,259	77,069	79,281	83,600	85,928	69.2
	1914	44,489	47,038	45,776	48,534	48,941	49,567	48,610	46,164	43,606	39,870	39,162	<i>37,843</i>	38,757	76.3
Shipbuilding, steel.....	1916	56,237	47,087	48,674	51,378	52,633	53,809	55,944	55,659	57,257	59,565	61,756	64,804	66,399	70.9
	1914	33,506	36,262	35,435	36,768	36,636	36,773	36,222	34,822	32,967	29,808	28,743	<i>28,107</i>	29,533	76.4
Shipbuilding, wooden, including boat building.	1916	16,260	12,346	12,941	13,406	15,168	16,348	17,307	17,129	17,002	17,504	17,525	18,796	19,529	63.2
	1914	10,981	10,776	10,341	11,746	12,305	12,794	12,388	11,342	10,639	10,062	10,419	9,736	<i>9,224</i>	72.1
Alabama.....	1916	541	385	493	534	422	395	510	453	540	582	669	747	762	50.5
	1914	464	433	453	535	445	480	512	431	521	452	530	573	403	69.7
California.....	1916	7,113	4,952	5,703	5,865	6,763	6,285	7,101	7,160	7,433	7,875	7,953	9,026	9,240	53.6
	1914	3,457	3,917	3,759	3,715	3,360	3,335	3,739	3,547	3,010	3,005	3,111	3,259	3,727	76.7
Connecticut.....	1916	1,312	976	<i>909</i>	977	1,096	1,095	1,063	1,557	1,588	1,552	1,487	1,741	1,703	52.2
	1914	514	406	<i>408</i>	471	559	594	574	550	538	543	517	507	507	67.7
Delaware.....	1916	1,938	1,948	1,909	1,822	2,068	2,072	2,126	1,448	1,686	2,268	2,037	1,883	2,001	64.1
	1914	784	771	779	918	976	966	928	896	713	655	671	588	<i>547</i>	56.0
Florida.....	1916	1,172	1,018	954	<i>884</i>	1,072	1,070	1,097	1,252	1,255	1,285	1,272	1,416	1,459	64.0
	1914	489	540	483	503	485	515	451	416	473	434	604	526	430	68.9
Illinois.....	1916	598	527	605	618	626	517	516	567	500	583	713	667	737	67.8
	1914	418	557	596	513	520	422	396	411	332	261	292	260	446	43.7
Louisiana.....	1916	1,308	893	994	971	794	1,063	1,262	1,435	1,486	1,563	1,674	1,639	1,988	41.8
	1914	666	880	913	904	741	684	616	642	704	487	496	450	475	49.3
Maine.....	1916	1,857	1,461	1,487	1,572	1,699	1,756	1,818	1,866	1,979	1,990	2,123	2,192	2,341	62.4
	1914	1,122	1,101	1,139	1,338	1,341	1,333	1,157	1,155	1,150	1,068	970	858	<i>854</i>	63.7
Maryland.....	1916	5,326	4,999	<i>4,473</i>	5,040	5,280	5,211	5,281	5,426	5,224	5,539	6,007	5,805	5,627	74.5
	1914	2,468	2,651	2,271	2,555	2,407	2,439	2,618	2,681	2,636	2,489	2,433	2,263	<i>2,171</i>	81.0
Massachusetts.....	1916	4,373	4,925	4,483	4,422	4,505	4,308	4,489	4,244	4,175	4,079	<i>4,024</i>	4,256	4,566	81.7
	1914	3,944	3,890	4,318	4,394	4,436	4,537	4,709	4,472	4,115	3,158	<i>2,968</i>	3,244	3,587	63.0
Michigan.....	1916	2,225	2,057	2,145	2,482	2,809	2,748	2,921	1,804	1,872	1,939	<i>1,784</i>	1,895	2,172	61.1
	1914	1,261	1,025	1,301	1,562	1,745	1,783	1,660	1,430	1,349	1,148	903	795	<i>451</i>	24.2
New Jersey.....	1916	7,777	6,529	6,546	7,078	7,256	8,053	7,632	7,897	7,947	8,081	8,536	8,788	8,981	72.7
	1914	6,324	6,291	6,190	6,324	6,623	6,790	6,827	6,687	6,259	5,981	5,958	5,926	6,092	86.7
New York.....	1916	9,928	7,809	8,381	8,528	9,549	10,171	10,451	10,523	10,220	10,424	10,493	10,959	11,516	68.7
	1914	6,076	6,475	5,706	6,359	6,612	7,078	6,632	5,988	5,689	<i>5,359</i>	5,733	5,546	5,535	75.7
Ohio.....	1916	5,059	4,005	4,573	4,800	5,079	4,998	5,326	5,403	5,412	5,298	5,259	5,198	5,369	74.0
	1914	2,879	3,175	3,431	3,566	3,443	3,209	2,852	2,890	2,752	2,444	2,077	<i>2,076</i>	2,633	58.2
Oregon.....	1916	1,003	300	500	475	472	554	738	797	1,031	1,374	1,638	2,002	2,171	13.8
	1914	164	163	209	224	197	209	166	156	147	127	122	141	<i>107</i>	47.8
Pennsylvania.....	1916	6,440	5,082	5,348	5,751	5,189	6,236	6,640	6,886	7,154	7,169	7,419	7,226	7,180	68.5
	1914	4,773	5,261	4,668	5,045	5,321	5,629	5,710	5,180	4,938	4,367	4,019	3,624	<i>3,514</i>	61.5
Rhode Island.....	1916	616	616	722	727	739	704	794	473	<i>467</i>	501	520	551	578	58.8
	1914	581	544	680	737	719	762	649	514	481	500	474	482	<i>430</i>	56.4
Virginia.....	1916	7,222	7,068	7,401	7,570	7,514	7,559	7,269	6,954	7,165	6,921	<i>6,788</i>	7,071	7,384	89.7
	1914	4,846	5,456	5,381	5,002	4,826	4,956	4,853	4,949	4,951	4,725	4,539	4,298	<i>4,216</i>	77.3
Washington.....	1916	3,744	1,890	<i>1,710</i>	2,184	2,235	2,546	3,150	3,408	3,941	4,825	5,532	6,839	6,668	25.0
	1914	1,444	1,649	1,717	1,663	1,698	1,639	1,474	1,375	1,271	1,273	1,162	<i>1,126</i>	1,255	65.6
Wisconsin.....	1916	1,250	666	993	1,153	1,174	1,218	1,310	1,353	1,336	1,314	1,433	1,571	1,479	42.4
	1914	695	625	750	947	1,016	1,048	919	691	513	<i>366</i>	517	457	501	34.0

Prevailing hours of labor.—In Table 12 the wage earners in the industry as a whole, in 1914 and 1909, have been classified according to the number of hours of labor per week prevailing in the establishments in which they were employed. In making this classification the average number of wage earners employed

during the year in each establishment was classified as a total according to the hours prevailing in that establishment, even though a few employees worked a greater or smaller number of hours. Figures for 1916 were not obtained.

Table 12

INDUSTRY AND STATE.	Census Year.	AVERAGE NUMBER OF WAGE EARNERS.					
		Total.	In establishment where the prevailing hours of labor per week were—				
			48 and under.	Between 48 and 54.	54.	Between 54 and 60.	Between 60 and 72.
United States.....	1914	44,489	14,730	7,638	12,320	1,524	7,771
	1909	40,506	3,865	2,674	9,883	10,045	14,038
Shipbuilding, steel	1914	33,508	11,928	6,861	6,900	928	6,393
	1909	28,143	1,758	1,811	4,188	8,810	11,576
Shipbuilding, wooden, including boat building.	1914	10,981	2,802	777	5,420	596	1,378
	1909	12,363	2,107	863	5,695	1,235	2,462
California.....	1914	3,457	3,035	.....	61	.....	361
	1909	1,844	228	1,144	400	.....	72
Connecticut.....	1914	514	252	37	209	7	9
	1909	427	4	23	266	116	18
Delaware.....	1914	784	8	5	746	.....	25
	1909	1,239	.....	.....	1,159	50	30
Louisiana.....	1914	666	6	.....	326	110	87
	1909	374	33	.....	258	.....	83
Maine.....	1914	1,122	649	39	199	60	175
	1909	1,755	26	3	179	1,265	282
Maryland.....	1914	2,468	185	1,378	678	91	136
	1909	1,793	74	32	464	1,056	167
Massachusetts.....	1914	3,944	3,130	333	463	7	11
	1909	3,604	94	170	658	2,673	9
Michigan.....	1914	1,261	98	30	730	14	389
	1909	2,344	2	3	85	1,093	1,161
New Jersey.....	1914	6,324	5,065	652	569	1	35
	1909	4,869	150	191	1,278	340	2,910
New York.....	1914	6,076	877	1,009	3,725	173	287
	1909	5,644	2,271	882	2,000	160	331
Ohio.....	1914	2,879	9	11	327	794	1,738
	1909	3,200	3	16	131	375	2,675
Pennsylvania.....	1914	4,773	344	4,111	163	118	37
	1909	3,558	378	156	143	2,842	39
Rhode Island.....	1914	581	1	1	678	.....	1
	1909	535	1	.....	512	.....	22
Virginia.....	1914	4,846	11	1	405	7	4,422
	1909	5,382	13	4	259	11	5,095
Washington.....	1914	1,444	351	.....	1,085	.....	8
	1909	744	272	2	452	.....	18
Wisconsin.....	1914	695	45	7	554	15	73
	1909	906	4	.....	501	33	368

The figures in this table emphasize the tendency toward the shortening of the working-day of wage earners. During the year 1909 only 40.5 per cent of the total number of wage earners worked in establishments where the prevailing hours were 54 or less per week, while during 1914, 78 per cent worked in establishments where these hours prevailed. The largest number of wage earners employed by any one group of establishments in 1909 was 14,038, or 34.7 per cent of the entire number employed in those establishments which operated 60 hours per week. In 1914 the largest number, practically the same proportion (33.1 per cent), were employed in establishments operating 48 hours or fewer per week. Some of the states display even more remarkable changes. In the state of Maine, in 1909, 1.7 per cent of the wage earners worked less than 54 hours per week, while by 1914 the proportion employed less than 54 hours had increased to 61.3 per

cent. In Maryland wage earners in establishments operating less than 54 hours increased from 5.9 per cent of the entire number in 1909 to 63.3 per cent in 1914; in Massachusetts, from 7.3 per cent to 87.8 per cent; in New Jersey, from 7 per cent to 90.4 per cent; and in Pennsylvania, from 15 per cent to 93.3 per cent. Maine, which in 1909 reported 88.1 per cent of the wage earners as working more than 54 hours per week, in 1914 reported only 20.9 per cent as being employed that length of time; for Maryland corresponding percentages were 68.2 per cent in 1909 and 9.2 per cent in 1914; for Massachusetts, 74.4 and five-tenths of 1 per cent; for New Jersey, 66.7 per cent and six-tenths of 1 per cent; and for Pennsylvania, 81 and 3.2 per cent. In 1909 the prevailing hours of labor in California were between 48 and 54 hours per week; in 1914, 48 hours and under.

Character of ownership.—Table 13 presents statistics concerning the character of ownership or legal organization of establishments in the shipbuilding industry for 1914 and 1909.

The shipbuilding and boat-building plants owned by corporations represented 27.3 per cent of the total number of establishments in 1916 as against 21.1 per cent in 1914, and 18.3 per cent in 1909. Corporations reported, for 1916, 91.6 per cent of the total average number of wage earners, and 92.2 per cent of the total value of products, and the corresponding percentages for 1914 were 89.8 and 89.1, respectively.

In all the states shown in the table, except Ohio and Washington, the number of establishments owned individually formed the largest class, both in 1916 and in 1914, but as in the United States as a whole, the corporations were the most important. In Michigan, during 1914, the establishments under corporate ownership gave employment to a fraction less than 75 per cent of the total average number of wage earners, but in 1916 the percentage thus employed increased to nearly 77 per cent. In all of the other states, both in 1916 and 1914, the corporations employed more than 75 per cent of the wage earners, and in California, Massachusetts, New Jersey, Ohio, Pennsylvania, and Rhode Island the proportion of wage earners employed under the corporate form of ownership exceeded 90 per cent in both years. The largest increase in the proportion of wage earners employed by corporations was in the state of Washington, the increase being from 85.5 per cent in 1914 to 95.6 per cent in 1916.

Maine was the only state showing a decrease from 1914 to 1916 in the proportion of the value of products of establishments under corporate ownership. All the states in the table, however, showed that corporations produced over 75 per cent of the total value of products, and California, Connecticut, Massachusetts, New Jersey, Ohio, Pennsylvania, and Rhode Island showed a production exceeding 90 per cent for both

years. Washington, which showed the largest increase in the proportion of wage earners employed by corporations, also showed the largest increase in the

proportion of total value of products, the increase being from 82.3 per cent in 1914 to 96.1 per cent in 1916.

Table 13

Table 13	INDUSTRY AND STATE.	Cen- sus year.	NUMBER OF ESTABLISHMENTS OWNED BY—			AVERAGE NUMBER OF WAGE EARNERS.									VALUE OF PRODUCTS.								
			Indi- vid- uals.	Cor- pora- tions.	All oth- ers.	Total.	In establishments owned by—			Per cent of total.			Total.	Of establishments owned by—			Per cent of total.						
							Indi- vid- uals.	Cor- pora- tions.	All oth- ers.	Indi- vid- uals.	Cor- pora- tions.	All oth- ers.		Indi- vid- uals.	Cor- pora- tions.	All oth- ers.	Indi- vid- uals.	Cor- pora- tions.	All oth- ers.				
United States.....	1916	630	310	197	72,497	3,647	66,442	2,408	5.0	91.6	3.3	\$185,852,192	\$8,849,579	\$171,361,267	\$5,641,346	4.8	92.2	3.0					
	1914	695	242	210	44,489	2,666	39,967	1,856	6.0	89.8	4.2	88,682,071	5,598,619	79,046,032	4,037,420	6.3	89.1	4.6					
	1909	824	247	282	40,506	3,660	34,475	2,371	9.0	85.1	5.9	73,360,315	6,796,334	61,646,548	4,917,433	9.3	84.0	6.7					
Shipbuilding, steel...	1916	11	87	11	56,236	618	55,244	374	1.1	98.2	0.7	144,619,111	1,420,661	142,255,944	942,506	1.0	98.4	0.6					
	1914	7	64	8	33,508	189	33,019	300	0.6	98.5	0.9	66,216,692	434,942	64,973,326	808,424	0.7	98.1	1.2					
Shipbuilding, wood- en, including boat building.	1916	619	223	186	16,261	3,029	11,198	2,034	18.6	68.9	12.5	41,233,081	7,428,918	29,105,323	4,698,840	18.0	70.6	11.4					
	1914	688	178	202	10,981	2,477	6,948	1,556	22.6	63.3	14.2	22,465,379	5,163,677	14,072,706	3,228,996	23.0	62.6	14.4					
California.....	1916	23	17	10	7,113	404	6,623	86	5.7	93.1	1.2	19,777,911	1,530,807	18,036,821	210,283	7.7	91.2	1.1					
	1914	28	17	7	3,457	203	3,171	83	5.9	91.7	2.4	8,104,033	550,871	7,350,730	202,432	6.8	90.7	2.5					
Connecticut.....	1916	20	9	2	1,312	100	1,212	.....	7.6	92.4	.....	6,217,274	163,835	6,053,439	.....	2.6	97.4	.....					
	1914	24	10	3	514	49	460	5	9.5	89.5	1.0	1,665,293	98,255	1,553,918	13,120	5.9	93.3	0.8					
Louisiana.....	1916	14	9	3	1,306	74	1,171	61	5.7	89.7	4.7	2,606,767	127,836	2,395,786	83,145	4.9	91.9	3.2					
	1914	7	6	4	666	45	534	87	6.8	80.2	13.1	1,080,319	31,580	956,732	92,007	2.9	88.6	8.5					
Maine.....	1916	62	18	20	1,857	163	1,452	242	8.8	78.1	13.0	4,882,131	475,171	3,797,229	609,731	9.7	77.8	12.5					
	1914	75	13	19	1,122	95	893	134	8.5	79.6	11.9	2,482,518	190,833	2,007,196	284,489	7.7	80.9	11.5					
Maryland.....	1916	29	14	7	5,326	259	4,879	188	4.9	91.6	3.5	12,205,557	483,147	11,268,684	453,726	4.0	92.3	3.7					
	1914	23	12	7	2,468	168	2,126	174	6.8	86.1	7.1	4,521,169	254,161	3,919,507	347,501	5.6	86.7	7.7					
Massachusetts.....	1916	60	15	10	4,373	202	4,115	56	4.6	94.1	1.3	12,185,354	440,007	11,573,772	171,575	3.6	95.0	1.4					
	1914	57	15	12	3,944	139	3,750	55	3.5	95.1	1.4	8,627,481	330,618	8,139,590	157,273	3.8	94.3	1.8					
Michigan.....	1916	37	11	7	2,225	381	1,712	132	17.1	76.9	5.9	5,637,103	679,570	4,620,709	336,824	12.1	82.0	5.9					
	1914	42	11	9	1,261	175	940	146	13.9	74.5	11.6	2,822,557	336,488	2,134,864	351,205	11.9	75.6	12.4					
New Jersey.....	1916	41	24	11	7,777	160	7,495	122	2.1	96.4	1.6	20,311,529	322,038	19,751,940	237,551	1.6	97.2	1.2					
	1914	51	23	11	6,324	148	6,095	81	2.3	96.4	1.3	11,860,965	331,988	11,333,679	195,298	2.8	95.6	1.6					
New York.....	1916	116	50	34	9,928	830	8,527	571	8.4	85.9	5.7	31,357,645	2,326,178	27,394,616	1,636,851	7.4	87.4	5.2					
	1914	129	39	39	6,076	697	4,935	444	11.5	81.2	7.3	14,135,298	1,619,349	11,433,607	1,142,342	11.4	80.5	8.0					
Ohio.....	1916	11	13	8	5,059	35	4,989	35	0.7	98.6	0.7	12,160,007	83,976	12,099,771	66,260	0.7	98.8	0.5					
	1914	12	12	5	2,879	74	2,769	36	2.6	96.2	1.3	4,716,787	105,840	4,537,147	73,800	2.2	96.2	1.6					
Pennsylvania.....	1916	14	11	5	6,440	123	6,282	35	1.9	97.5	0.5	16,816,071	282,145	16,397,417	136,609	1.7	97.5	0.8					
	1914	17	9	7	4,773	131	4,531	111	2.7	94.9	2.3	9,539,865	275,820	9,084,585	179,460	2.9	95.2	1.9					
Rhode Island.....	1916	7	4	3	616	44	567	5	7.1	92.0	0.8	1,523,614	86,770	1,421,910	14,934	5.7	93.3	1.0					
	1914	8	4	3	581	43	535	3	7.4	92.1	0.5	1,209,372	80,807	1,116,634	11,931	6.7	92.3	1.0					
Washington.....	1916	21	23	13	3,744	49	3,581	114	1.3	95.6	3.0	10,829,812	118,980	10,406,725	304,107	1.1	96.1	2.8					
	1914	35	11	18	1,444	95	1,234	115	6.6	85.5	8.0	3,101,446	273,265	2,551,020	277,161	8.8	82.3	8.9					
Wisconsin.....	1916	13	11	6	1,250	22	1,157	71	1.8	92.6	5.6	3,826,847	40,019	3,649,285	137,543	1.0	95.4	3.6					
	1914	17	12	5	695	24	606	65	3.5	87.2	9.4	1,254,088	50,202	1,099,122	104,764	4.0	87.6	8.4					

¹ Includes the group "All others."

Classification according to size.—The tendency of the industry to become concentrated in large estab-

lishments is indicated by the statistics given in Table 14.

Table 14

VALUE OF PRODUCT.	Census year.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.	VALUE OF PRODUCT.	Census year.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.
All classes.....	1916	1,137	72,497	\$185,852,192	\$96,583,362	Per cent distribution: Less than \$5,000.....	1916	40.5	0.7	0.6	0.7
	1914	1,147	44,489	88,682,071	50,085,101		1914	47.9	1.3	1.4	1.6
	1909	1,353	40,506	73,360,315	42,145,957		1909	50.4	1.8	2.1	2.4
Less than \$5,000.....	1916	461	472	1,019,222	682,718	\$5,000 to \$20,000.....	1916	26.4	2.4	1.7	2.1
	1914	549	558	1,199,688	822,806		1914	27.4	3.8	3.6	4.1
	1909	682	724	1,534,941	1,032,169		1909	26.7	5.3	5.0	5.5
\$5,000 to \$20,000.....	1916	300	1,764	3,101,970	2,015,011	\$20,000 to \$100,000.....	1916	17.3	6.0	4.8	5.3
	1914	314	1,669	3,216,529	2,096,431		1914	15.9	9.4	8.9	8.9
	1909	361	2,147	3,688,013	2,325,787		1909	16.1	13.4	12.8	13.1
\$20,000 to \$100,000.....	1916	197	4,364	9,006,099	5,132,024	\$100,000 to \$1,000,000.....	1916	12.7	23.2	22.8	23.1
	1914	182	4,162	7,916,353	4,442,517		1914	7.6	26.0	28.5	30.2
	1909	218	5,422	9,388,497	5,538,002		1909	5.8	26.0	28.8	29.9
\$100,000 to \$1,000,000.....	1916	144	16,827	42,396,128	22,343,535	\$1,000,000 and over.....	1916	3.1	67.7	70.1	68.8
	1914	87	11,581	25,230,918	15,108,403		1914	1.3	59.6	57.6	55.2
	1909	78	10,550	21,143,086	12,602,776		1909	1.0	53.5	51.3	49.0
\$1,000,000 and over.....	1916	35	49,070	130,328,773	66,410,074						
	1914	15	25,619	51,118,578	27,644,944						
	1909	14	21,603	37,605,778	20,647,223						

Table 15—Continued.

INDUSTRY AND STATE.	Cen- sus year.	TOTAL.		ESTABLISHMENTS EMPLOYING—																
				No wage earn- ers.	1 to 5 wage earn- ers.		6 to 20 wage earn- ers.		21 to 50 wage earn- ers.		51 to 100 wage earn- ers.		101 to 250 wage earn- ers.		251 to 500 wage earn- ers.		501 to 1,000 wage earn- ers.		Over 1,000 wage earn- ers.	
		Estab- lish- ments.	Wage earn- ers (average num- ber).	Estab- lish- ments.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.
Pennsylvania.....	1916	30	6,440	4	7	18	8	70	3	88	4	276	2	318	---	---	1	967	1	4,703
	1914	33	4,773	3	15	45	6	94	3	126	3	244	2	213	---	---	---	---	---	4,051
	1909	31	3,558	2	12	26	7	70	2	61	3	199	3	366	1	334	---	---	1	2,502
Rhode Island.....	1916	14	616	3	5	11	2	19	2	53	---	---	1	156	1	377	---	---	---	---
	1914	15	581	1	9	17	2	33	1	36	---	---	1	134	1	361	---	---	---	---
	1909	13	535	---	7	18	3	47	1	36	1	91	---	---	1	343	---	---	---	---
Virginia.....	1916	30	7,221	1	15	40	5	58	3	88	2	113	3	341	---	---	---	---	1	6,581
	1914	29	4,846	1	16	46	6	54	1	25	3	219	1	103	---	---	---	---	1	4,399
	1909	36	5,382	2	25	68	4	31	1	21	3	197	---	---	---	---	---	---	1	5,065
Washington.....	1916	57	3,744	8	18	34	15	165	5	176	6	470	3	353	---	---	1	951	1	1,595
	1914	64	1,444	13	31	81	14	135	4	135	1	75	---	---	---	---	---	---	1	1,018
	1909	60	744	8	28	57	18	201	4	124	1	75	---	---	1	287	---	---	---	---
Wisconsin.....	1916	30	1,250	1	16	28	6	59	3	107	2	194	---	---	2	862	---	---	---	---
	1914	34	695	2	20	33	7	93	2	65	1	98	1	142	1	264	---	---	---	---
	1909	52	906	5	33	59	8	85	3	82	---	---	2	406	1	274	---	---	---	---

Considering the total for all states there were 146 establishments in operation during 1916 in which no wage earners were employed, as compared with 170 in 1914 and 192 in 1909. In some cases a few wage earners were employed for short periods, but the periods were so short and the numbers so small that in computing the average number as described in the "Explanation of terms," no wage earners could be shown.

Of the total number of wage earners, 60,492, or 83.4 per cent, in 1916; 35,388, or 79.5 per cent, in 1914; and 29,488, or 72.8 per cent, in 1909 were reported by establishments which employed more than 100 wage earners. The most important group at each census was that comprising establishments which employed more than 1,000 wage earners. This group reported 53.2 per cent, 47.9 per cent, and 44.1 per cent of the total number of wage earners in 1916, 1914, and 1909, respectively. It is noteworthy that of the establishments employing more than 1,000 wage earners in 1916, three were located in Ohio and two each in Maryland, New Jersey, and New York, although the three largest were in California, Pennsylvania, and Virginia. The group of establishments which employed from one to five wage earners shows a decrease both in number of establishments and number of wage earners in 1916 as compared with 1914 and 1909. Each of the groups of establishments employing from 6 to 100 wage earners, increased both in number of establishments and in number of wage earners between 1914 and 1916, although these groups decreased between 1904 and 1914. The states showing the largest percentage of increase between 1914 and 1916 in the number of wage earners employed in the shipbuilding plants were Oregon, 511.6 per cent; Washington, 159.3 per cent; Connecticut, 155.3 per cent; Delaware, 147.2 per cent; Florida, 193.7 per cent; and Maryland, 115.8 per cent.

Engines and power.—Table 16 shows, for 1914, 1909, and 1904, for the industry, the number and horsepower of engines or motors employed in generating current (including electric motors operated by purchased current). It also shows separately the number and horsepower of electric motors operated by current generated in the establishments reporting. This information was not called for on the schedule for 1916.

The total primary horsepower used in the shipbuilding and the boat-building industry increased 47.6 per cent between 1904 and 1914. Owned power shows a proportional decrease from 96.7 per cent in 1904 to 73.7 per cent in 1914, due to the relative increase of the use of rented electric power, which increased from 3 per cent in 1904 to 26.1 per cent in 1914. The proportion which the power generated by steam engines and turbines formed of the total owned primary power shows a decrease from 94.3 per cent in 1904 to 69 per cent in 1914. The use of power generated by internal-combustion engines shows a marked increase, from 2.3 per cent in 1904 to 4.6 per cent in 1914. The proportion of the power generated by water wheels, turbines, and motors did not differ from one census to another, the percentage of the total—one-tenth of 1 per cent—being the same for each census period.

Rented power, which formed 3.3 per cent of the total power used in 1904, increased to 26.3 per cent of the total in 1914. Since the census of 1904, electricity has assumed an increasingly important place in the shipbuilding industry. The total horsepower of electric motors in use in 1914 amounted to 66,275, a little over one-half of which represented the power of motors run by current generated in the establishments reporting. Table 37 shows for 1914 the amount of each of the several kinds of power used in each of the states.

Table 16

POWER.	NUMBER OF ENGINES OR MOTORS.			HORSEPOWER.					
				Amount.			Per cent distribution.		
	1914	1909	1904	1914	1909	1904	1914	1909	1904
Primary power, total.....	2,999	1,960	1,359	115,333	88,063	78,127	100.0	100.0	100.0
Owned.....	1,338	1,416	1,206	85,029	78,769	75,529	73.7	89.4	96.7
Steam engines and turbines ¹	831	991	1,015	79,599	75,180	73,657	69.0	85.4	94.3
Internal-combustion engines.....	502	420	182	5,336	3,503	1,785	4.6	4.0	2.3
Water wheels, turbines, and motors.....	5	5	9	94	86	87	0.1	0.1	0.1
Rented.....	1,661	544	153	30,304	9,294	2,598	26.3	10.6	3.3
Electric.....	1,661	544	153	30,085	9,264	2,367	26.1	10.6	3.0
Other.....				219	30	231	0.2	(²)	0.3
Electric.....	3,989	2,266	1,290	66,275	35,334	17,630	100.0	100.0	100.0
Rented.....	1,661	544	153	30,085	9,264	2,367	45.4	26.2	13.4
Generated by establishments reporting.....	2,328	1,722	1,137	36,190	26,070	15,263	54.6	73.8	86.6

¹ Figures for horsepower include for 1909 and 1904 the amount reported under the head of "other" owned power.² Less than one-tenth of 1 per cent.

The states which, in 1914, ranked highest with respect to the amount of power used in the shipbuilding industry were New York, New Jersey, Pennsylvania, and Ohio in the order named. The total horsepower reported for these four states in 1914 was 48,963, or 42.5 per cent of the total for the United States. Although steam was the power most commonly used in all the states, New York and Pennsylvania reported more rented electric power than any other kind and New York also reported a large amount of power derived from internal-combustion engines.

Fuel.—Table 17 shows for 1914 the kind and quantity of fuel used, for which data were obtained, for the industry as a whole and for 16 of the leading states.

Bituminous coal was the principal fuel used in the shipbuilding industry, 251,820 tons being consumed in 1914. The largest amount was reported for New Jersey, which state also reported the largest consumption of anthracite coal. California reported 78,596 barrels of oil, or 63.9 per cent of the total quantity of this

kind of fuel consumed in the industry, while Ohio reported 95.6 per cent of all the gas used.

Table 17

STATE.	SHIPBUILDING, INCLUDING BOAT BUILDING: 1914.				
	Coal.		Coke (short tons).	Oil, including gasoline (barrels).	Gas (1,000 cubic feet).
	Anthracite (long tons).	Bituminous (short tons).			
United States.....	13,441	251,820	10,548	122,929	404,785
California.....	15	175	.....	78,596	30
Connecticut.....	91	2,227	108	317	112
Delaware.....	512	7,209	451	3,471	167
Louisiana.....	4	740	34	1,452	.....
Maine.....	19	4,871	1	254	140
Maryland.....	481	19,677	364	1,205	370
Massachusetts.....	326	28,652	350	475	237
Michigan.....	19	22,594	410	2,290	194
New Jersey.....	6,179	36,101	1,397	7,170	520
New York.....	4,255	23,347	639	2,657	5,741
Ohio.....	64	24,434	1,851	4,174	387,074
Pennsylvania.....	140	33,877	1,552	245	219
Rhode Island.....	69	4,582	9	43	82
Virginia.....	88	23,693	2,984	6,804	660
Washington.....	5	61	190	11,679	.....
Wisconsin.....	49	5,762	39	113	.....
All other states.....	1,125	13,818	169	1,984	9,239

SPECIAL STATISTICS.

Statistics covered and terms used.—The schedules used in collecting the statistics of shipbuilding required a detailed statement of the number, kind, and tonnage of vessels launched; the number, kind, and value of boats built; and a statement of the value of the different kinds of work done. These statistics were collected for the years 1914 and 1916. For 1914 additional information regarding the repair facilities of shipyards was required.

In explanation of the terms gross and net tons, it should be stated that gross tonnage is the total internal cubic capacity of a vessel, expressed in tons of 100 cubic feet each, while net tonnage is the internal cubical capacity remaining after deductions have been made from gross tonnage for quarters of officers and crew, for boilers, machinery, and coal bunkers, and for navigation and other purposes. Net tonnage, therefore, may be regarded as that portion of the vessel which is available for passengers and cargo. Tonnage measurements are not altogether uniform among maritime nations, but vary with the laws of the nation under which registry is made. Displacement tonnage, which is used in stating the size of vessels of the United States Navy, differs from gross and net tonnage as applied to merchant vessels, and is merely the weight of the volume of water displaced, equivalent, of course, to the weight of the vessel. The tonnage of vessels of the United States Navy, as given in the statistics, is always displacement tonnage. While gross tonnage and displacement tonnage are not by any means the same, it is necessary to combine the tonnage of vessels whose capacity is reckoned in one way with that of vessels whose capacity is reckoned by the other method in order to obtain a total which should represent approximately the total tonnage launched during the year.

In the tables which follow, gross tonnage is shown for 1916 and 1914 unless otherwise specified, and the statistics do not include the products of Government shipyards nor the subsidiary products of establishments in other industries unless specifically stated.

Vessels and boats.—Table 18 shows the number and gross tonnage of all vessels launched during the census years 1916, 1914, 1909, and 1904 and distinguishes three classes of establishments reporting for 1914, 1909, and 1904, and two classes of establishments for 1916. In many cases a large part of the work on vessels launched during the census years was done in prior years, and, on the other hand, much work was done during each census year on vessels which were not launched.

In 1914, 1909, and 1904 shipbuilding statistics were collected as a part of the quinquennial census of manufactures for these years and include data for vessels and boats built by establishments engaged primarily in other lines of manufacture and hence not classed as shipbuilding, whereas the census of 1916 did not cover other manufacturing industries but was limited to the shipbuilding industry proper. The statistics for 1916, therefore, are those of establishments engaged primarily in ship and boat building and repairs, and include Government shipyards but do not include any ships or boats that may have been built in establishments designated as "Private establishments in other industries." The number, as well as the tonnage, of vessels launched by these private establishments is relatively small, the tonnage amounting to only 3 per cent of the total in 1914, 2.6 per cent in 1909, and 3.1 per cent in 1904.

The decline in shipbuilding during the 10-year period from 1904 to 1914 is clearly brought out by the fact that there was a decrease in number and tonnage of both steel and wooden vessels of 5 tons and over. The depression in the shipbuilding industry during this 10-year period was somewhat relieved by 1916, as the table shows an increase in 1916 over 1914 both in number and tonnage of vessels launched.

The total gross tonnage of vessels launched in 1916 by private establishments in the shipbuilding industry was 734,108, an amount exceeding that launched in 1914 by 309,048 gross tons, or 72.7 per cent. The construction of steel vessels, which decreased both in number and in gross tonnage between 1909 and 1914, shows a great increase between 1914 and 1916, the increase being 104, or 82.5 per cent, in number of vessels built, and 242,901, or practically 100 per cent, in gross tonnage. The tonnage of the steel vessels amounted to 66.2 per cent of the total tonnage launched by private establishments. The year 1916 also shows an increased activity in the building of wooden vessels, the period between 1909 and 1904 having been one of depression in the wooden shipbuilding industry. The number of wooden vessels launched decreased from 1,426 in 1909 to 987 in 1914, and the gross tonnage of these from 212,233 to 182,101, but in 1916 there was a gain over 1914 of 160 in number and 66,147, or 36.3 per cent, in gross tonnage. The number of small power boats of less than 5 tons built in 1916 was 3,606, as compared with 3,706 in 1914, 8,577 in 1909, and 3,499 in 1904.

Table 18

CLASS.	Census year.	NUMBER AND GROSS TONNAGE OF VESSELS LAUNCHED DURING THE YEAR, AND NUMBER OF POWER BOATS.							
		All establishments.		Private establishments in the shipbuilding industry.		Private establishments in other industries. ¹		Government shipyards.	
		Number.	Gross tonnage.	Number.	Gross tonnage.	Number.	Gross tonnage.	Number.	Displacement tonnage.
Vessels of 5 gross tons and over	1916	1,463	772,167	1,377	734,108	.....	.....	86	38,059
	1914	1,255	455,567	1,113	425,060	94	13,654	48	16,853
	1909	1,637	481,813	1,584	467,219	22	12,535	31	2,059
	1904	2,279	728,104	2,114	678,525	134	22,327	31	27,252
Classified by materials:									
Steel.....	1916	244	518,858	230	485,860	.....	.....	14	32,998
	1914	215	268,870	126	242,959	69	9,792	20	16,119
	1909	169	260,765	158	254,986	8	5,429	3	350
	1904	172	352,669	152	328,411	3	408	17	23,850
Wooden.....	1916	1,219	253,309	1,147	248,248	.....	.....	72	5,061
	1914	1,040	186,697	987	182,101	25	3,862	28	734
	1909	1,468	221,048	1,426	212,233	14	7,106	28	1,709
	1904	2,107	375,435	1,962	350,114	131	21,919	14	3,402
Classified by power:									
Steam.....	1916	206	472,597	186	442,354	.....	.....	20	30,243
	1914	148	243,011	139	234,636	.....	.....	9	8,375
	1909	194	235,315	181	234,633	3	429	10	253
	1904	320	368,117	308	349,600	6	467	6	18,050
Motor.....	1916	434	30,316	403	29,866	.....	.....	31	450
	1914	382	10,867	370	10,821	4	6	8	40
	1909	447	9,413	445	9,389	2	24	.....	.....
	1904	311	3,247	307	3,157	4	90	.....	.....
Sail, with auxiliary power.....	1916	62	30,625	62	30,625	.....	.....	.....	.....
	1914	66	6,575	58	2,799	8	3,776	.....	.....
	1909	68	2,652	68	2,652	.....	.....	.....	.....
	1904	352	68,615	349	64,615	.....	.....	3	4,000
Sail, without auxiliary power.....	1916	62	15,456	62	15,456	.....	.....	.....	.....
	1914	40	2,224	40	2,224	.....	.....	.....	.....
	1909	51	14,807	51	14,807	.....	.....	.....	.....
	1904	.....	.....	.....	.....	.....	.....	.....	.....
Unrigged.....	1916	699	273,173	664	215,807	.....	.....	35	7,366
	1914	619	192,890	506	174,580	82	9,872	31	8,438
	1909	877	219,626	839	205,738	17	12,082	21	1,806
	1904	1,296	288,125	1,150	261,153	124	21,770	22	5,202
Power boats of less than 5 gross tons.....	1916	3,710	.....	3,606	.....	.....	.....	104	.....
	1914	4,518	.....	3,706	.....	758	.....	54	.....
	1909	9,042	.....	8,577	.....	412	.....	53	.....
	1904	3,916	.....	3,499	.....	365	.....	52	.....

¹ Not reported in 1916.² Includes sail, without auxiliary power.

Of the 1,377 vessels of all kinds launched by private establishments in the industry in 1916, 186 with a total gross tonnage of 442,354 were steam vessels, an increase of 47 over the number and 207,718 over the gross tonnage of steam vessels launched in 1914. Motor craft launched in 1916 were 403 and the gross tonnage was 29,866. Sailboats, both with and without auxiliary power, show an increase in number launched and gross tonnage between 1914 and 1916.

Establishments in the industry show the increase in average gross tonnage of vessels launched in 1916, as compared with those of 1914. The increase in the average tonnage of steam vessels amounted to 690 tons, or 40.8 per cent; that of motor craft from an average of about 29 gross tons to 74, while the average tonnage of sailboats with auxiliary power in 1916 was more than ten times the average of 48 gross tons shown for 1914. Sailboats without auxiliary power

also show an increase in average tonnage from about 56 tons in 1914 to nearly 250 in 1916.

Unrigged craft, although declining in both number and tonnage of vessels launched from 1904 to 1914, shows a decided increase from 1914 to 1916.

The number of vessels of 5 tons and over launched in Government shipyards in 1916 was almost double the number launched in 1914 and the total tonnage more than double. Of the 86 vessels launched 14 were steel vessels and 72 wooden. The total tonnage of steam vessels launched in Government shipyards increased more than 260 per cent between 1914 and 1916.

Table 19 shows, for private establishments in the shipbuilding industry, the number of vessels launched and the gross tonnage and the number of power boats built of less than 5 tons, for 1916 and 1914, by coast divisions and inland waters.

Table 19

CLASS.	Census year.	NUMBER AND GROSS TONNAGE OF VESSELS LAUNCHED, AND NUMBER OF POWER BOATS.							
		United States.	Coast divisions.				Inland waters.		
			North Atlantic.	South Atlantic.	Gulf.	Pacific.	Great Lakes.	Mississippi River and its tributaries.	Other inland waters.
Vessels launched during the year, 5 gross tons and over:									
Number.....	1916	1,377	597	138	87	223	89	234	9
	1914	1,113	401	99	126	231	82	153	21
Gross tonnage.....	1916	734,108	280,249	128,614	18,507	134,086	121,134	50,593	925
	1914	425,060	174,632	69,286	23,733	41,112	43,251	71,612	1,434
Steel:									
Number.....	1916	230	64	27	7	20	57	55	-----
	1914	126	41	21	6	15	21	22	-----
Gross tonnage.....	1916	485,860	136,909	108,929	1,990	102,119	118,606	17,313	-----
	1914	242,959	108,042	60,114	1,931	23,973	39,929	8,970	-----
Wooden:									
Number.....	1916	1,147	533	111	80	203	32	179	9
	1914	987	360	78	120	216	61	131	21
Gross tonnage.....	1916	248,248	143,340	19,685	16,517	31,967	2,534	33,280	925
	1914	182,101	66,590	9,172	21,802	17,139	3,322	62,642	1,434
Steam:									
Number.....	1916	186	58	22	7	33	46	20	-----
	1914	139	44	18	4	22	29	20	2
Gross tonnage.....	1916	442,354	126,319	95,897	2,652	111,404	102,464	3,618	-----
	1914	234,636	104,100	57,544	415	28,890	38,811	4,798	78
Motor:									
Number.....	1916	403	170	38	22	123	22	24	4
	1914	370	123	33	28	132	39	8	7
Gross tonnage.....	1916	29,866	7,052	13,960	466	7,315	479	549	45
	1914	10,821	2,221	593	1,909	4,996	972	86	44
Sail, with auxiliary power:									
Number.....	1916	62	31	3	12	9	7	-----	-----
	1914	58	35	3	2	15	3	-----	-----
Gross tonnage.....	1916	30,625	2,854	1,420	4,595	9,985	11,771	-----	-----
	1914	2,799	1,746	56	72	835	90	-----	-----
Sail, without auxiliary power:									
Number.....	1916	62	33	1	12	15	1	-----	-----
	1914	40	18	2	5	15	-----	-----	-----
Gross tonnage.....	1916	15,456	9,395	75	2,298	1,368	2,320	-----	-----
	1914	2,224	1,844	64	194	122	-----	-----	-----
Unrigged:									
Number.....	1916	664	305	74	34	43	13	190	5
	1914	506	181	43	87	47	11	125	12
Gross tonnage.....	1916	215,807	134,629	17,262	8,496	4,014	4,100	46,426	880
	1914	174,580	64,721	11,029	21,143	6,269	3,378	66,728	1,312
Power boats launched during the year of less than 5 gross tons.....	1916	3,806	1,946	143	152	191	412	462	300
	1914	3,706	1,265	206	127	363	541	427	777

The North Atlantic division ranked first in 1916 and 1914, both in gross tonnage and in the number of vessels launched. There was constructed in this division in 1916, 43.3 per cent of all the vessels built in the United States, comprising 38.2 per cent of the total tonnage, as compared with 36 and 41.1 per cent, respectively, in 1914. There was an increase in 1916 over 1914 in the gross tonnage of steel and wooden vessels launched in the North Atlantic division, the increase being 26.7 per cent and 115.1 per cent, respectively.

There were six establishments in the South Atlantic division which constructed 27 steel vessels of 108,929 gross tons during 1916. The vessels built in this coast district were of much greater tonnage per vessel than those constructed in the North Atlantic division. The higher average tonnage, 4,034, was caused by one establishment building 8 vessels of nearly 8,000 tons each. There was a great increase in the size of motor vessels; in 1916, 38 such craft were launched with an average tonnage of 367, as compared with 33 built in 1914 with an average of 18 gross tons.

In the Gulf division the table shows for 1916, as compared with 1914, a decrease in number and tonnage of vessels launched. In 1916 there were 87 vessels of

all kinds launched as compared with 126 in 1914, a decrease of 39. In the later year the total gross tonnage of vessels launched was 18,507, as compared with 23,733 in the earlier year, a decrease of 5,226 tons, or 22 per cent. The decrease in the number and tonnage of vessels launched was chiefly due to the smaller number and tonnage of unrigged craft built and does not necessarily indicate a decline in shipbuilding activities, for Table 6, shows that the number of wage earners employed in 1916 and the value of work done in the Gulf district exceeded that of 1914.

The Pacific division, which holds an important position in the shipbuilding industry, has made rapid progress since 1904, at which time California held fifth place among the states in the value of products; Oregon, twenty-first; and Washington, twelfth place. Although there was a slight decrease in the number of vessels built from 1914 to 1916, there was a large increase in tonnage launched. The total gross tonnage of all classes of vessels constructed in this division in 1916 was 134,086, an increase over 1914 of 92,974, or 226.1 per cent. The relative increase in tonnage of steel vessels launched during the same period was even greater, amounting to 326 per cent. While there were only 5 more steel vessels launched on the Pacific

coast in 1916 than in 1914, there was a large increase in the mean tonnage per vessel, from 1,598 to 5,106 tons. This large increase in tonnage per vessel was, in a measure, due to the fact that 10 steel vessels for the coastwise or foreign trade, with an average tonnage of 7,494, were constructed by one establishment in California. In total tonnage launched in 1916 this division holds second place, being outranked only by the North Atlantic division.

The steel tonnage launched in the Great Lakes division in 1916 was 118,600, or 197 per cent greater than that launched in 1914. The number and gross tonnage of steam vessels built show increases, between 1914 and 1916, while decreases are shown for motor vessels. In 1914 three sail vessels with auxiliary power, having an average gross tonnage of 30, were built in this district, but in 1916 seven such vessels were constructed with an average tonnage of 1,682.

The number and gross tonnage of steel vessels launched during 1916 on the Mississippi River and its

tributaries were much greater than in 1914. In 1916, 55 steel vessels with a gross tonnage of 17,313 were launched as compared with 22 vessels with a total gross tonnage of 8,970 in 1914. In 1916 the same number of steam vessels was built in this division as in 1914, but the total tonnage was 1,180 less. Motor craft were the only class showing an increase between 1914 and 1916, in both number and average tonnage.

No steel vessels were constructed either in 1914 or 1916 in "Other inland waters" and only 9 wooden vessels were built in 1916 with a gross tonnage of 925 and these were motor and unrigged vessels. There was a relatively large number of small power boats under 5 gross tons constructed, in 1916, in this division, but the number, 300, was 477 less than the number constructed in 1914.

Table 20 shows the number, class, gross tonnage, and place where launched of all steel vessels built in the United States in 1916, exclusive of Government vessels.

Table 20

STEEL VESSELS LAUNCHED: 1916.

LOCATION OF SHIPYARD.		STEEL VESSELS LAUNCHED: 1916.									
		Total.		Steam		Motor.		Sail.		Unrigged.	
		Num- ber.	Tonnage.	Num- ber.	Tonnage.	Num- ber.	Tonnage.	Num- ber.	Tonnage.	Num- ber.	Tonnage.
Total.....		230	455,860	126	424,791	25	13,200	8	14,191	71	28,678
ALABAMA.....	Mobile.....	1	70	1	70						
CALIFORNIA.....	Long Beach.....	3	2,250	1	1,250	2	1,000				
	Oakland.....	1	4,823	1	4,823						
	San Francisco.....	10	74,939	10	74,939						
CONNECTICUT.....	Bridgeton.....	2	795			2	795				
DELAWARE.....	Wilmington.....	12	14,998	6	13,532	3	482			3	984
FLORIDA.....	Jacksonville.....	2	318	1	258	1	60				
	Tampa.....	1	1,566	1	1,566						
ILLINOIS.....	Chicago.....	1	2,029	1	2,029						
INDIANA.....	Jeffersonville.....	5	1,018	5	1,018						
IOWA.....	Dubuque.....	2	165			1	15			1	150
KENTUCKY.....	Bowling Green.....	1	28			1	28				
LOUISIANA.....	Harvey.....	1	30			1	30				
	Violet.....	1	80							1	80
MAINE.....	Bath.....	5	4,199	3	2,599					2	1,600
MARYLAND.....	Baltimore.....	9	13,881	4	836	5	13,045				
	Sparrows Point.....	8	31,952	8	31,952						
MASSACHUSETTS.....	Boston.....	1	204			1	204				
	Quincy.....	10	38,646	7	36,776	3	1,870				
MICHIGAN.....	Detroit.....	15	36,566	12	35,618					3	948
	Ferrysburg.....	2	940							2	940
	Marine City.....	2	400							2	400
NEW JERSEY.....	Camden.....	9	25,285	3	19,559					6	5,726
	Elizabethport.....	2	762	2	762						
NEW YORK.....	Buffalo.....	4	276	2	26					2	250
	City Island.....	2	284	1	269	1	15				
	Croton on Hudson.....	1	50	1	50						
	Newburgh.....	3	1,624							3	1,624
	Port Richmond.....	5	1,844	5	1,844						
OHIO.....	Ashtabula.....	4	7,910	4	7,910						
	Cleveland.....	8	8,860	7	6,540			1	2,320		
	Elmwood.....	6	792							6	792
	Lorain.....	5	37,542	5	37,542						
	Toledo.....	6	11,743					6	11,743		
PENNSYLVANIA.....	Ambridge.....	39	14,624							39	14,624
	Chester.....	2	11,200	2	11,200						
	Dravosburg.....	1	186	1	186						
	Philadelphia.....	9	36,890	8	36,330					1	560
	Pittsburgh.....	1	500	1	500						
RHODE ISLAND.....	Bristol.....	1	128					1	128		
TEXAS.....	Beaumont.....	2	54			2	54				
	Galveston.....	1	190			1	190				
VIRGINIA.....	Newport News.....	8	62,778	8	62,778						
WASHINGTON.....	Seattle.....	6	20,107	5	19,695	1	412				
WISCONSIN.....	Green Bay.....	2	755	2	755						
	Manitowoc.....	6	2,320	6	2,320						
	Superior.....	2	9,259	2	9,259						

The greatest tonnage, 74,939, was launched in San Francisco, Calif., and the second greatest tonnage in Newport News, Va. While San Francisco holds first place in aggregate tonnage, the vessels launched in Newport News were of larger average tonnage, the figures being 7,494 and 7,847, respectively. For

these two places was reported 28.3 per cent of the total steel tonnage launched in the United States in 1916.

Table 21 shows, by coast divisions and inland waters, steel vessels launched during 1916, classified according to screw and stern wheel.

Table 21

DIVISION.	STEEL POWER VESSELS LAUNCHED: 1916.											
	Total.				Screw.				Stern wheel.			
	Steam.		Motor.		Steam.		Motor.		Steam.		Motor.	
	Num- ber.	Tonnage.	Num- ber.	Tonnage.	Num- ber.	Tonnage.	Num- ber.	Tonnage.	Num- ber.	Tonnage.	Num- ber.	Tonnage.
United States.....	126	424,791	25	18,200	117	422,999	24	18,172	9	1,792	1	28
North Atlantic.....	38	122,921	10	3,366	38	122,921	10	3,366				
South Atlantic.....	21	95,824	6	13,105	21	95,824	6	13,105				
Gulf.....	2	1,636	4	274	1	1,566	4	274	1	70		
Pacific.....	17	100,707	3	1,412	17	100,707	3	1,412				
Great Lakes.....	41	101,999			40	101,981			1	18		
Mississippi River and its tributaries.....	7	1,704	2	43			1	15	7	1,704	1	28
Other inland waters.....												

¹ Includes 1 steam vessel propelled by side wheel and 3 catamarans propelled by center wheel.

Of the 126 steam and 25 motor equipped vessels, 117 steam and 24 motor were screw propelled; 5 steam and 1 motor were propelled by stern wheel and 1 steam was propelled by side wheel, while 3 steam were center wheel catamarans built in Jeffersonville, Ind., for use on the Mississippi River.

Table 22 shows by coast divisions and inland waters the gross tonnage of vessels launched during 1914 and 1916, according to the service in which vessels are to be used. In this and the following tables data does not include the products of Government shipyards.

The bulk of the shipbuilding in the United States has heretofore been the tonnage built for the domestic and coastwise trade, which combined, represented 70.7 per cent of the entire tonnage launched in 1914, and 65.9 per cent in 1916. Notwithstanding an increase of 574.1 per cent over 1914, the tonnage of vessels constructed primarily for the foreign trade represents but a small proportion of the entire output of the shipyards, or 29.2 per cent in 1916. The domestic water transportation of the United States is confined to vessels constructed and owned in the United States. Shipbuilding for this trade amounted to 43.8 per cent of the total construction in 1916.

The Commissioner of Navigation, in his annual report for the fiscal year ended June 30, 1916, says:

"Of the steel tonnage under construction in the United States, American builders, according to their returns to the Bureau of Navigation, before June 30, 1917, will launch 326 ships of 998,035 gross tons. In that event the product of American yards will exceed that of all foreign yards outside of the United Kingdom combined, and will probably exceed the output of the British yards."¹

In 1914 the North Atlantic division built 41.1 per cent of the total tonnage constructed in American shipyards, but in 1916 only 38.2 per cent. The Pacific division, which ranked fifth in total tonnage launched in 1914, held second place in 1916. The largest amount of tonnage constructed for the foreign trade in 1916 was built in the shipyards located in the Pacific division, 43.8 per cent of the total. In 1914 the South Atlantic division led all others in this respect. In 1916 the largest amount of domestic tonnage was built in the North Atlantic division, the amount built in the Great Lakes division closely following, and these two divisions, combined, built 73.6 per cent of the total output of domestic tonnage. Over one-half of the coastwise tonnage was also constructed in the North Atlantic division in 1916.

¹ Report of Commissioner of Navigation, 1916, p. 19.

Table 22

CHARACTER OF SERVICE.	Census year.	GROSS TONNAGE OF VESSELS LAUNCHED.							
		United States.	Coast divisions.				Inland waters.		
			North Atlantic.	South Atlantic.	Gulf.	Pacific.	Great Lakes.	Mississippi River and its tributaries.	Other inland waters.
Total tonnage.....	1916	734,108	280,249	128,614	18,507	134,086	121,134	50,593	925
	1914	425,060	174,632	69,286	23,733	41,112	43,251	71,612	1,434
Foreign.....	1916	214,582	38,581	65,692	1,845	93,939	14,525		
	1914	31,832	13,149	18,448	100	135			
Coastwise.....	1916	161,894	88,194	46,282	8,647	18,771			
	1914	48,952	1,456	26,035	643	20,818			
Domestic.....	1916	321,722	131,977	15,864	7,767	13,398	104,937	46,869	910
	1914	251,606	92,067	20,619	22,587	11,287	42,932	60,718	1,396
Fishing.....	1916	3,858	1,481		114	2,062	201		
	1914	2,747			279	2,417	51		
Government.....	1916	16,267	9,965	133	15	2,662	50	3,442	
	1914	71,655	63,540	3,113		2,982		2,020	
Pleasure.....	1916	6,527	4,170	503	59	77	1,421	282	15
	1914	3,769	2,722	641		115	268	6	17
All other.....	1916	9,258	5,881	140	60	3,177			
	1914	14,499	1,698	430	124	3,358		8,868	21
Iron and steel tonnage.....	1916	485,860	136,969	108,929	1,990	102,119	118,600	17,313	
	1914	242,959	108,042	60,114	1,931	23,973	39,929	8,970	
Foreign.....	1916	209,323	37,859	65,692		91,247	14,525		
	1914	31,412	12,964	18,448					
Coastwise.....	1916	131,959	80,995	43,144		7,820			
	1914	45,367	844	24,150		20,373			
Domestic.....	1916	125,799	7,150	33	1,990		102,755	13,871	
	1914	80,558	28,521	14,662	1,804	893	39,929	659	
Fishing.....	1916								
	1914								
Government.....	1916	15,521	9,357	60		2,662		3,442	
	1914	71,121	63,540	2,854		2,707		2,020	
Pleasure.....	1916	2,403	1,083				1,320		
	1914	1,109	1,109						
All other.....	1916	855	465			390			
	1914	7,392	1,064		37			6,291	
Wooden tonnage.....	1916	248,248	143,340	19,685	16,517	31,967	2,534	33,280	925
	1914	182,101	66,590	9,172	21,802	17,139	3,322	62,642	1,434
Foreign.....	1916	5,259	722		1,845	2,692			
	1914	420	185		100	135			
Coastwise.....	1916	29,935	7,199	3,138	8,647	10,951			
	1914	3,585	612	1,885	643	445			
Domestic.....	1916	195,923	124,827	15,831	5,777	13,398	2,182	32,998	910
	1914	165,048	63,546	5,957	20,693	10,394	3,003	60,059	1,396
Fishing.....	1916	3,858	1,481		114	2,062	201		
	1914	2,747			279	2,417	51		
Government.....	1916	746	608	73	15		50		
	1914	534		259		275			
Pleasure.....	1916	4,124	3,087	503	59	77	101	282	15
	1914	2,660	1,613	641		115	268	6	17
All other.....	1916	8,403	5,416	140	60	2,787			
	1914	7,107	634	430	87	3,358		2,577	21

Table 23 shows, by classes, the number and gross tonnage of vessels launched during 1916 grouped according to tonnage.

The group "Less than 100 gross tons," contains 44.3 per cent of the total number of vessels launched and only 2.4 per cent of the tonnage, while the group "3,000 gross tons and over" (3,000 tons being virtually

the minimum tonnage for overseas trade) shows only 5.4 per cent of the number but 54.2 per cent of the tonnage launched in 1916. In the first group mentioned, but 18 of the vessels were constructed of steel, while in the group having the tonnage of 3,000 and over, all were of metal construction, no wooden vessels of this size being built during 1916.

Table 23

CLASS.	VESSELS LAUNCHED—GROUPED ACCORDING TO TONNAGE: 1916.											
	Total.		Less than 100 gross tons.		100 but less than 500 gross tons.		500 but less than 1,000 gross tons.		1,000 but less than 3,000 gross tons.		3,000 gross tons and over.	
	Number.	Tons.	Number.	Tons.	Number.	Tons.	Number.	Tons.	Number.	Tons.	Number.	Tons.
All vessels.....	1,377	734,108	610	17,378	503	144,561	141	97,797	49	75,920	74	397,952
Steel.....	230	485,860	18	890	95	29,493	21	15,099	22	42,426	74	397,952
Wooden.....	1,147	248,248	592	16,988	408	115,068	120	82,698	27	33,494		
Steam and motor.....	589	472,220	407	9,943	69	16,337	18	13,127	21	34,861	74	397,952
Steel.....	151	442,991	17	810	36	10,277	10	6,689	14	27,263	74	397,952
Wooden.....	438	29,229	390	9,133	33	6,060	8	6,438	7	7,598		
Sail.....	124	46,081	77	1,869	13	2,332	17	11,921	17	29,959		
Steel.....	8	14,191			1	128			7	14,063		
Wooden.....	116	31,890	77	1,869	12	2,204	17	11,921	10	15,896		
Unrigged.....	664	215,807	126	6,066	427	119,747	100	68,894	11	11,100		
Steel.....	71	28,678	1	80	58	19,088	11	8,410	1	1,100		
Wooden.....	593	187,129	125	5,986	363	100,804	89	64,339	10	10,000		

Table 24 gives, by states, the total number and gross tonnage of all vessels of 5 tons and over launched in 1916, 1914, and 1909 by establishments in the shipbuilding industry, exclusive of Government shipyards.

Table 24

STATE.	VESSELS LAUNCHED.					
	1916		1914		1909	
	Num-ber.	Tonnage (gross).	Num-ber.	Tonnage (gross).	Num-ber.	Tonnage (gross).
United States.....	1,377	734,108	1,113	425,060	1,584	467,219
California.....	118	89,108	88	31,500	59	8,563
Connecticut.....	18	3,365	19	1,995	45	5,447
Delaware.....	44	25,472	10	6,624	16	10,871
Florida.....	45	6,614	22	1,141	35	3,215
Illinois.....	4	2,058	4	85	9	991
Kentucky.....	65	16,163	51	40,000	90	41,240
Louisiana.....	40	11,974	73	17,501	69	7,012
Maine.....	45	15,486	43	3,072	44	12,654
Maryland.....	66	57,767	58	36,961	52	34,160
Massachusetts.....	55	42,484	45	32,056	82	17,703
Michigan.....	29	38,340	21	12,405	53	41,847
Minnesota.....	7	1,446	4	1,195	6	231
Mississippi.....	17	2,358	13	1,420	31	8,086
New Jersey.....	75	33,752	65	57,866	90	53,261
New York.....	337	111,709	220	49,911	309	60,152
North Carolina.....	8	2,268	11	730	17	858
Ohio.....	54	74,320	35	36,824	88	31,803
Oregon.....	36	11,652	41	2,495	34	4,718
Pennsylvania.....	128	71,856	56	30,533	205	12,775
Texas.....	12	2,265	29	4,293	19	1,680
Virginia.....	36	63,943	24	31,538	38	44,388
Washington.....	69	33,326	102	7,117	137	5,256
Wisconsin.....	21	13,436	29	3,048	29	6,453
All other states.....	48	2,966	50	14,750	27	3,855

¹ Exclusive of 94 vessels, with an aggregate gross tonnage of 13,654, launched by establishments in other industries.

² Exclusive of 22 vessels, with an aggregate gross tonnage of 12,535, launched by establishments in other industries.

Of the total number of vessels of 5 tons and over launched in 1916, New York built 24.5 per cent, and Pennsylvania built the next largest number. New York also built the greatest tonnage in 1916, with California, Ohio, and Pennsylvania following in the order named. This order was somewhat different in 1914 when New Jersey ranked first, followed by New York, Kentucky, and Maryland, and in 1909 when Ohio ranked first, followed by New York, New Jersey, and Virginia in the order named.

Table 25 shows for the United States and for 15 states separately, for 1916, 1914, and 1909, the number, and the gross and net tonnage of steam vessels of 5 tons and over launched in private shipyards.

In 1916, of the states for which totals are presented, California, Virginia, Ohio, and Pennsylvania led in the order named, and combined represented 246,679 gross tons, or 55.8 per cent of the total for steam vessels, of 5 tons and over, launched in private yards. Virginia, the second state in total tonnage launched, led in respect to average gross tonnage per vessel with an average for the 8 steamships launched in 1916 of 7,847 per vessel. In 1914 the leading states in respect to tonnage of steam vessels were New Jersey, Virginia, Massachusetts, and Maryland, in the order named, and in 1909, Ohio, Michigan, Virginia, and New Jersey.

Table 25

STATE.	STEAM VESSELS LAUNCHED.								
	1916			1914			1909		
	Num-ber.	Tonnage.		Num-ber.	Tonnage.		Num-ber.	Tonnage.	
		Gross.	Net.		Gross.	Net.		Gross.	Net.
United States.....	186	442,354	297,724	139	234,636	175,094	181	234,633	168,959
California.....	16	82,766	46,622	9	26,420	17,490	9	4,993	3,264
Delaware.....	8	13,965	9,642	8	6,266	3,796	8	8,296	5,432
Indiana.....	8	1,645	1,641	11	3,800	2,550	8	1,386	619
Maine.....	5	3,417	2,957	5	1,400	1,317	8	3,888	2,983
Maryland.....	13	32,861	20,513	11	27,368	16,794	7	17,733	10,007
Massachusetts.....	12	37,732	27,169	4	29,940	19,200	20	12,381	8,232
Michigan.....	13	35,945	23,303	6	11,512	7,273	15	41,231	31,073
New Jersey.....	6	20,331	12,021	6	41,182	36,137	10	27,395	26,322
New York.....	17	3,281	2,595	19	3,056	1,900	30	7,528	5,185
Ohio.....	17	52,046	41,154	6	26,205	19,778	16	57,764	44,171
Oregon.....	5	4,719	3,209	5	251	171	8	1,522	1,154
Pennsylvania.....	19	49,089	31,407	18	23,547	23,374	9	2,841	2,680
Virginia.....	8	62,778	47,703	7	30,176	22,896	8	40,730	23,065
Washington.....	12	23,919	16,258	8	2,219	1,453	5	800	574
Wisconsin.....	12	12,415	7,917	6	362	251	7	4,694	3,121
All other states.....	15	5,445	3,613	10	932	714	13	1,451	1,077

Table 26 shows, by states, the number and the gross and net tonnage of motor vessels, including sail ves- | sels with auxiliary power, of 5 tons and over, launched in private shipyards in 1916, 1914, and 1909.

Table 26

Table 26	STATE.	Census year.	MOTOR VESSELS LAUNCHED, INCLUDING SAILING VES- SELS WITH AUXILIARY POWER.			STATE.	Census year.	MOTOR VESSELS LAUNCHED, INCLUDING SAILING VES- SELS WITH AUXILIARY POWER.		
			Num- ber.	Tonnage.				Num- ber.	Tonnage.	
				Gross.	Net.				Gross.	Net.
United States.....	1916	465	60,491	45,251	New Jersey.....	1916	45	1,022	800	
	1914	428	13,620	9,974		1914	22	1,419	1,256	
	1909	513	12,041	9,204		1909	31	469	347	
Motor.....	1916	403	29,866	19,198	New York.....	1916	72	1,735	1,379	
	1914	370	10,821	7,789		1914	60	958	653	
	1909	445	9,389	7,224		1909	91	1,949	1,486	
Sail, with auxiliary power.....	1916	62	30,625	26,053	North Carolina.....	1916	2	81	61	
	1914	58	2,799	2,185		1914	8	175	121	
	1909	68	2,652	1,980		1909	13	158	138	
California.....	1916	76	3,511	2,003	Ohio.....	1916	12	11,974	9,424	
	1914	70	2,815	1,971		1914	6	129	89	
	1909	20	534	395		1909	16	432	336	
Connecticut.....	1916	10	1,174	1,132	Oregon.....	1916	14	6,205	5,875	
	1914	12	180	127		1914	7	317	234	
	1909	27	553	492		1909	21	368	281	
Florida.....	1916	15	194	149	Pennsylvania.....	1916	5	116	111	
	1914	15	247	177		1914	8	66	52	
	1909	25	337	232		1909	1	5	5	
Louisiana.....	1916	14	3,017	2,767	Texas.....	1916	6	1,925	1,566	
	1914	13	1,593	1,301		1914	9	198	124	
	1909	8	68	52		1909	3	40	27	
Maine.....	1916	23	1,812	1,469	Virginia.....	1916	12	183	180	
	1914	34	541	339		1914	11	118	72	
	1909	26	431	288		1909	6	118	70	
Maryland.....	1916	20	14,997	10,003	Washington.....	1916	42	7,584	5,910	
	1914	6	194	114		1914	70	2,699	2,032	
	1909	8	593	518		1909	88	1,526	1,075	
Massachusetts.....	1916	37	3,278	1,092	Wisconsin.....	1916	7	221	183	
	1914	34	899	550		1914	15	413	331	
	1909	51	3,271	2,604		1909	19	259	204	
Michigan.....	1916	9	107	89	All other states.....	1916	44	1,355	1,058	
	1914	11	361	252		1914	17	298	179	
	1909	34	408	330		1909	25	522	324	

¹ Exclusive of 2 vessels, with an aggregate gross tonnage of 24, launched by establishments in other industries.

Motor vessels, which now form such a large and distinct class, were reported separately for the first time in 1904. At that time they numbered 311, and averaged slightly over 10 gross tons in size. In 1909 their average capacity was 21 tons; in 1914 over 29 tons; and in 1916 nearly 75 tons. The change from 1904 to 1916 in the size of motor craft is due to the building of internal-combustion engines in larger units, of improved reliability and compactness, making them practical for use in larger vessels. California reported the largest number of vessels of this class launched in 1916. In 1914 California and Washington each reported the largest number, and in 1909 Washington reported the largest number.

Sail vessels with auxiliary power, launched in 1916, included in the preceding table along with motor vessels were distributed as follows:

	Num-ber.	Gross tons.	Net tons.
Total.....	62	30,625	26,053
Ohio.....	6	11,743	9,205
Oregon.....	5	6,087	5,787
Washington.....	2	3,788	3,040
Louisiana.....	5	2,830	2,610
Maine.....	15	1,720	1,381
Texas.....	1	1,660	1,390
Maryland.....	2	1,360	1,360
Massachusetts.....	8	755	686
New York.....	4	166	162
California.....	2	110	110
All other states.....	12	406	322

In the construction of sail vessels with auxiliary power Ohio led in tonnage, but Maine launched the greater number. The tonnage launched in Ohio represented 38.3 per cent of the total gross tonnage launched in the United States in 1916. The vessels were built at Toledo, Ohio, 6 in number, and were of steel; 2 had a gross tonnage of 1,930 each; 1 of 1,955; and 3 of 1,976 tons each, and were designed for the coastwise trade. The largest wooden vessel of this class, one of 2,492 gross tons, intended for the foreign trade, was built and launched at Aberdeen, Wash. Another vessel of this class of 1,660 gross tonnage was launched in Orange, Tex. There is a wide variation in the tonnage of vessels of this class due to the diversified character and class of service. Some are for pleasure, while others are for fishing and freighting.

Table 27 gives for the United States and 10 states separately, the number and the gross and net tonnage of sail vessels without auxiliary power, of 5 tons and over, launched in private shipyards in 1916, 1914, and 1909.

Table 27

STATE.	Census Year.	SAIL VESSELS WITHOUT AUXILIARY POWER LAUNCHED.		
		Num-ber.	Tonnage.	
			Gross.	Net.
United States.....	1916	62	15,456	14,048
	1914	40	2,224	1,874
	1909	51	14,807	12,710
Florida.....	1916	1	8	8
	1914	5	194	157
	1909	2	69	39
Maine.....	1916	8	4,772	4,118
	1914	3	687	596
	1909	10	8,335	6,861
Maryland.....	1916	1	75	75
	1914	2	64	45
	1909	4	1,150	1,143
Massachusetts.....	1916	6	1,474	1,365
	1914	6	667	487
	1909	9	1,343	1,100
Mississippi.....	1916	8	751	751
	1914			
	1909	8	2,910	2,770
New Jersey.....	1916	4	1,488	1,377
	1914	2	40	23
	1909	4	130	89
New York.....	1916	2	26	18
	1914	5	38	32
	1909	2	19	16
Ohio.....	1916	1	2,320	2,070
	1914			
	1909	1	513	405
Oregon.....	1916	14	168	168
	1914	14	112	112
	1909			
Washington.....	1916	1	1,200	1,200
	1914			
	1909			
All other states.....	1916	16	3,174	2,898
	1914	3	422	422
	1909	11	338	284

From 1909 to 1914 there was a large decrease in the tonnage launched of sail vessels without auxiliary power, from 14,807 gross tons to 2,224 gross tons or 85 per cent, while from 1914 to 1916 the tonnage of this class of vessels increased 13,232 gross tons, or nearly 600 per cent.

Maine led in amount of gross tonnage launched in 1916 as well as in 1914 and 1909; Ohio and New Jersey ranked second and third, respectively, in 1916. The combined tonnage launched in these three states represented 55.5 per cent of the total tonnage of this class of vessels launched in the United States during 1916.

The largest sailing vessel without auxiliary power launched in 1916 was one of 2,320 gross tons built in Cleveland, Ohio. It was of steel construction and was designed for the coastwise trade. The largest wooden vessel of this class was one of 1,891 gross tons, built in Bath, Me., for the coastwise and foreign trade.

Table 28 gives for the United States and for 12 states separately the number and gross and net tonnage of unrigged vessels launched by private shipyards in 1916, 1914, 1909, and 1904.

STATE.	Census year.	UNRIGGED VESSELS LAUNCHED.		
		Number.	Tonnage.	
			Gross.	Net.
United States.....	1916	664	215,807	197,018
	1914	1,506	174,580	156,397
	1909	1,839	205,738	190,325
	1904	1,150	261,153	250,571
California.....	1916	26	2,831	2,811
	1914	8	2,255	1,910
	1909	29	3,016	2,971
	1904	48	5,777	5,562
Kentucky.....	1916	59	15,880	15,843
	1914	47	39,968	24,983
	1909	(¹)	(¹)	(¹)
	1904	17	4,898	4,898
Louisiana.....	1916	19	6,422	6,237
	1914	58	15,848	15,748
	1909	58	6,830	6,816
	1904	73	11,480	10,055
Maryland.....	1916	32	9,834	9,834
	1914	39	9,335	9,305
	1909	33	14,684	9,864
	1904	49	20,133	19,104
Mississippi.....	1916	4	1,500	1,500
	1914	9	1,200	1,200
	1909	20	5,081	5,016
	1904	13	1,955	1,670
New Jersey.....	1916	20	10,911	10,911
	1914	35	15,225	14,956
	1909	45	25,267	24,488
	1904	35	19,605	19,481
New York.....	1916	246	106,667	105,186
	1914	136	45,859	45,106
	1909	186	50,656	44,903
	1904	211	84,311	80,694
Ohio.....	1916	24	7,980	7,628
	1914	23	10,490	9,490
	1909	55	23,094	20,304
	1904	41	3,434	3,245
Oregon.....	1916	3	560	560
	1914	15	1,815	1,665
	1909	(¹)	(¹)	(¹)
	1904	(¹)	(¹)	(¹)
Pennsylvania.....	1916	103	22,616	7,463
	1914	30	6,920	6,920
	1909	195	9,929	9,763
	1904	472	66,002	65,650
Virginia.....	1916	16	982	950
	1914	6	1,244	1,244
	1909	23	3,531	3,478
	1904	12	2,280	2,215
Washington.....	1916	14	623	503
	1914	24	2,199	2,199
	1909	44	2,930	2,930
	1904	34	4,437	3,816
All other states.....	1916	98	29,001	27,594
	1914	76	22,222	21,671
	1909	151	60,720	59,792
	1904	145	36,841	34,281

¹ Exclusive of 82 vessels, with an aggregate gross tonnage of 9,872, launched by establishments in other industries.

² Exclusive of 17 vessels, with an aggregate gross tonnage of 12,082, launched by establishments in other industries.

³ Exclusive of 124 vessels, with an aggregate gross tonnage of 21,770, launched by establishments in other industries.

⁴ Included in "All other states."

Floating dry docks, floating coal docks, and scows constructed for a single trip are not included in

Table 28. There are, however, a considerable number of sand and mud scows, coal boats and lighters, dredges, and pile drivers included in the statistics. In 1916 there were 664 unrigged craft built with a total tonnage of 215,807, as compared with 506, with a total tonnage of 174,580 built in 1914; 839, with a total tonnage of 205,738, in 1909; and 1,150, with a total tonnage of 261,153, in 1904. The principal state in the construction of unrigged craft in 1916 as in 1914 was New York, where there were built, in 1916, 246 barges, lighters, canal boats, and scows, with a total gross tonnage of 106,667. A large number of these were for use in New York Harbor and in the river trade; 3 were steel barges of 1,624 gross tons to be used for carrying oil in bulk. Pennsylvania ranked second in 1916 in both number and gross tonnage. The establishments located in that state built 86 barges for the river trade, with a total gross tonnage of 14,656, of which 23, with a tonnage of 7,224, were constructed of steel; there were also built 4 steel car floats for use in New York Harbor and 2 steel car floats, one to be used in the river trade and the other intended for the coastwise trade. There were also constructed 11 steel barges, floats, etc., for the United States Government, to be used in the rivers and in the Gulf of Mexico. In Kentucky 59 barges, with a gross tonnage of 15,880, were built for use in the river trade, while in Ohio 18 barges were constructed with 7,188 gross tonnage for the same use, and 4 steel flats and two steel barges for the Federal Government for use on the Ohio River.

Among the states shown, California, Kentucky, New York, Ohio, Pennsylvania, and Virginia show increases in the number of boats built, and California, Maryland, Mississippi, New York, and Pennsylvania, increases in tonnage from 1914 to 1916.

Table 29 shows, for the United States and for 18 states separately, for 1916 and 1914, the number of power boats built of less than 5 tons.

Table 29	STATE.	NUMBER OF POWER BOATS BUILT (less than 5 tons).		STATE.	NUMBER OF POWER BOATS BUILT (less than 5 tons).	
		1916	1914		1916	1914
	United States.....	3,606	3,706	Minnesota.....	68	103
	California.....	66	158	New Jersey.....	187	477
	Connecticut.....	100	49	New York.....	337	377
	Florida.....	157	163	Ohio.....	308	567
	Illinois.....	104	386	Pennsylvania.....	23	28
	Iowa.....	20	27	Rhode Island.....	13	16
	Maine.....	198	223	Virginia.....	21	33
	Maryland.....	51	75	Washington.....	52	171
	Massachusetts.....	1,291	273	Wisconsin.....	109	115
	Michigan.....	172	235	All other states.....	324	230

Massachusetts was by far the leading state in 1916 in the manufacture of small power boats. The number of such boats built in that state increased from 273 in 1914 to 1,291 in 1916. New York was second in the number of power boats built in 1916. In 1914 Ohio reported the largest number of these boats and New Jersey the next largest number.

Value of work done during census year.—The construction of a vessel frequently takes more than a year; therefore, many vessels launched during the census year were started in previous years, and some upon which work was started during the census year were not finished during that year. For this reason the census office did not require the shipbuilders to report the value of the vessels launched, but only the value of the work done during the census year and the amount received for repair work. For the smaller vessels, those of less than 5 gross tons, the value of work done during the year corresponds very closely with the value of the craft as launched.

Table 30 shows the value of the construction work done, the amount received for repair work, and the value of all other work done by shipbuilding establishments, both private and Government, in 1916, 1914, 1909, and by private establishments in other industries for 1914 and 1909.

KIND OF WORK.	Census year.	VALUE OF WORK DONE DURING THE YEAR BY—			
		All estab- lishments.	Private es- tablishments in the ship- building industry.	Private es- tablish- ments in other in- dustries. ¹	Govern- ment ship- yards.
Total.....	1916	\$224,526,683	\$185,852,192	.....	\$38,674,491
	1914	119,423,028	88,682,071	\$1,523,692	29,217,265
	1909	100,009,054	73,360,315	776,706	25,872,033
Work on new vessels and boats, all kinds.	1916	114,434,137	105,270,935	.....	9,163,202
	1914	52,401,805	46,334,134	1,279,630	4,788,041
	1909	45,036,493	42,310,925	594,244	2,131,323
Vessel of 5 gross tons and over.	1916	110,343,073	101,531,210	.....	8,811,863
	1914	48,105,561	42,545,445	947,805	4,612,311
	1909	40,145,084	37,718,018	449,089	1,977,977
Boats of less than 5 gross tons.	1916	4,091,064	3,739,725	.....	351,339
	1914	4,295,244	3,788,689	331,825	175,730
	1909	4,891,408	4,592,907	145,155	153,346
Repair work.....	1916	71,225,368	63,508,514	.....	7,716,854
	1914	36,966,676	32,835,212	185,777	3,945,687
	1909	38,304,658	26,678,643	80,461	11,545,554
All other work done.....	1916	38,867,178	\$17,072,743	.....	\$21,794,435
	1914	30,054,547	\$9,512,725	58,285	20,483,537
	1909	16,667,904	4,370,747	102,001	12,195,156

¹ Not reported in 1916.

² Includes work on engines to the value of \$3,335,055.

³ Includes work on engines to the value of \$169,141.

⁴ Includes work on engines to the value of \$4,498,703.

The value of all work done during the year on new vessels and boats in all shipyards increased from \$52,401,805 in 1914, to \$114,434,137 in 1916, or 118.4 per cent. These figures indicate the impetus given the shipbuilding industry by the world war. The value of work done on new vessels of 5 gross tons and over in private establishments amounted to \$37,718,018 in 1909, to \$42,545,445 in 1914, and to \$101,531,210 in

1916, showing an increase from 1914 to 1916 of 138.6 per cent. Repair work on vessels and boats increased from \$26,678,643 in 1909, to \$32,835,212 in 1914, and to \$63,508,514 in 1916. All other work done, which includes work on engines, and the making of masts, oars, spars, etc., increased from \$4,370,747 in 1909, to \$17,072,743 in 1916. The value of work done on new vessels and boats in Government shipyards alone increased 91.4 per cent between 1914 and 1916.

Table 31 shows the total value of the work done in the privately operated shipbuilding establishments in 1916, 1914, 1909, and 1904, the total being subdivided so as to show the value of work on new vessels; the amount received for repair work, and the value of all other work done during the year. In this table Government shipyards and establishments in other industries doing incidental work on ships and boats are not included.

KIND OF WORK.	VALUE OF WORK DONE DURING THE YEAR BY PRIVATE ESTABLISHMENTS IN THE SHIP- BUILDING INDUSTRY.			
	1916	1914	1909	1904
Total.....	\$185,852,192	\$38,682,071	\$73,360,315	\$82,769,239
Work done during the year on new vessels and boats.....	105,270,935	46,334,134	42,310,925	56,121,227
Vessels of 5 gross tons and over.....	101,531,210	42,545,445	37,718,018	53,119,985
Steel construction.....	85,418,006	36,236,458	30,038,672	43,395,704
Wooden construction.....	16,113,204	6,249,987	7,679,346	9,724,231
Boats of less than 5 gross tons.....	3,739,725	3,788,689	4,592,907	3,001,292
Steam.....	6,544	30,522	20,800	.....
Motor (gasoline, electric, other).....	1,988,802	2,001,284	3,155,375	1,879,288
Sailboats, rowboats, canoes, scoops, etc.....	1,744,319	1,756,883	1,416,732	1,122,004
Repair work.....	63,508,514	32,835,212	26,678,643	22,829,040
Steel.....	44,821,223	20,537,928	15,862,659	12,191,854
Wooden.....	18,687,291	12,297,284	10,815,984	10,637,186
All other work done.....	17,072,743	9,512,725	4,370,747	3,818,972

Of the \$101,531,210 representing the work done on new vessels of 5 gross tons and over, \$85,418,006, or 84.1 per cent, was the value of work on new steel vessels, and this shows an increase of 135.3 per cent over the value of work performed on new steel vessels in 1914. The table shows a steady decrease from 1904 to 1914 in the value of work on new wooden vessels, but from 1914 to 1916 the value of this work increased from \$6,249,987 to \$16,113,204, or 157.8 per cent. The value of repair work on steel vessels formed 70.6 per cent of the entire value reported for repair work.

There was a large increase from 1914 to 1916 in the value of repair work on both classes of vessels, that on steel vessels increasing from \$20,537,928 to \$44,821,223, or 118.2 per cent, while the value of repair work on wooden vessels increased from \$12,297,284 to \$18,687,291, or 52 per cent.

Table 32 shows, by states, the value of repair work done in the private establishments in the shipbuilding industry for 1916, 1914, 1909, and 1904.

Table 32 STATE.	VALUE OF REPAIR WORK REPORTED BY PRIVATE ESTABLISHMENTS IN THE SHIPBUILDING INDUSTRY.			
	1916	1914	1909	1904
United States.....	\$63,508,514	\$32,835,212	\$26,678,643	\$22,829,040
California.....	3,594,445	3,348,852	2,529,183	2,190,542
Connecticut.....	927,579	342,972	319,591	355,032
Delaware.....	110,151	177,318	348,539	454,780
Florida.....	913,678	516,011	536,584	116,360
Illinois.....	434,494	467,979	411,230	439,509
Indiana.....	60,074	83,606	70,663	(1)
Iowa.....	12,277	11,071	42,474	31,075
Kentucky.....	125,246	127,773	85,902	(1)
Louisiana.....	1,466,794	433,555	364,738	(1)
Maine.....	380,474	434,191	346,635	297,855
Maryland.....	3,046,777	1,374,515	985,112	1,010,622
Massachusetts.....	3,104,207	1,069,137	874,433	854,036
Michigan.....	1,455,258	1,081,206	1,126,544	688,482
Minnesota.....	92,156	121,838	136,053	55,900
Mississippi.....	136,278	40,862	50,484	125,951
New Jersey.....	8,313,981	4,206,315	3,123,032	2,254,794
New York.....	23,884,480	10,081,332	6,931,117	6,726,959
North Carolina.....	92,508	52,600	36,569	63,300
Ohio.....	2,125,580	2,058,521	1,324,166	1,229,123
Oregon.....	152,017	98,201	100,788	184,276
Pennsylvania.....	4,249,199	1,512,126	2,531,364	1,762,243
Rhode Island.....	1,197,501	927,833	647,064	660,303
Virginia.....	3,397,591	1,507,320	1,324,045	1,157,595
Washington.....	1,600,617	1,447,385	880,613	712,851
West Virginia.....	209,864	124,933	136,156	86,595
Wisconsin.....	905,834	745,890	1,172,543	571,746
All other states.....	1,519,454	441,870	243,011	808,111

¹ Included in "All other states."

New York was the leading state in the value of repair work in 1916, as it was in 1914, 1909, and 1904, the amount of work done in this state in 1916 being nearly one-third of the total for the United States. New Jersey, Pennsylvania, and California ranked next in the order named. Other states doing work in excess of a million dollars were Louisiana, Maryland, Massachusetts, Michigan, Ohio, Rhode Island, Virginia, and Washington. The states shown in the table not reporting an increase in repair work were Delaware, Illinois, Indiana, Kentucky, Maine, and Minnesota. The value of repair work formed 34.2 per cent of the total value of products of all work done by the shipbuilding industry in 1916, 37 per cent in 1914, 36.4 per cent in 1909, and 27.6 per cent in 1904.

Dry docks and marine railways.—When the repair work of shipyards is considered, the question of the equipment of the various plants naturally arises. Table 33 shows the number and kind of dry docks in private and Government shipyards, classified according to dimensions, for 1914, 1909, and 1904. Figures for 1916 were not obtained.

In 1914 there were 250 dry docks in the shipyards of the United States. This is an increase of 34 over 1909, and 90 over 1904. Of the 250 dry docks reported in 1914, 152 were over a hundred feet long in

floor measurement, while 67 of these measured over 300 feet; 104 of the docks measured over 50 feet in width at entrance, among these 47 measured over 75 feet in width, 45 docks had a depth of sill of over 20 feet, sufficient depth to accommodate the largest vessels.

Table 33

CLASS.	DRY DOCKS.		
	1914	1909	1904
Total number.....	250	216	160
Stationary:			
Wooden.....	62	57	74
Masonry, concrete, or steel.....	21	23	
Floating.....	167	136	86
With floor length of—			
Over 300 feet.....	67	53	53
201 to 300 feet.....	27	20	18
101 to 200 feet.....	58	70	75
100 feet or less.....	98	73	14
With entrance width of—			
Over 75 feet.....	47	37	22
51 to 75 feet.....	57	54	53
26 to 50 feet.....	109	89	62
25 feet or less.....	37	36	23
With sill depth of—			
Over 20 feet.....	45	30	25
10 to 20 feet.....	108	98	101
Less than 10 feet.....	97	88	34

Table 34 shows statistics relative to the number, dimensions, and lifting capacity of marine railways in operation in 1914, 1909, and 1904.

Table 34

	MARINE RAILWAYS.		
	1914	1909	1904
Total number.....	678	1 696	413
Total lifting capacity, tons.....	129,994	147,031	147,047
With cradle length of—			
Over 200 feet.....	32	38	44
101 to 200 feet.....	123	110	133
50 to 100 feet.....	185	178	107
Less than 50 feet.....	338	370	129
With cradle breadth of—			
Over 50 feet.....	12	5	16
25 to 50 feet.....	133	126	140
Less than 25 feet.....	533	1 565	257
With maximum cradle draft submerged of—			
Over 15 feet.....	45	47	51
11 to 15 feet.....	96	86	99
5 to 10 feet.....	411	410	221
Less than 5 feet.....	126	153	42
With lifting capacity of—			
Over 1,000 tons.....	25	22	34
501 to 1,000 tons.....	34	56	54
100 to 500 tons.....	180	172	141
Less than 100 tons.....	439	446	184

¹ Figures do not agree with those published because it was necessary to make certain revisions in order to make them comparable with those for 1914.

Of the 678 marine railways reported in the United States for 1914, 155 had a cradle length of more than 100 feet, 145 had a cradle breadth exceeding 25 feet. Fifty-nine of the railways had a lifting capacity of 500 tons.

DETAIL STATE TABLES.

The principal data secured by the census inquiry concerning the shipbuilding industry, other than those regarding vessels launched, value of different kinds of work done, and equipment, are presented, by states, in Tables 35, 36, and 37.

Table 35 shows, for 1916, 1914, and 1909, the num-

ber of establishments, average number of wage earners, primary horsepower, capital, wages, cost of materials, and value of products, by states, for the shipbuilding industry.

Tables 36 and 37 give similar statistics in somewhat greater detail for 1916 and 1914, respectively.

TABLE 35.—COMPARATIVE SUMMARY, BY STATES, FOR 1916, 1914, AND 1909.

STATE.	Cen- sus year.	Num- ber of estab- lish- ments.	Wage earn- ers (aver- age num- ber).	Pri- mary horse- power. ¹	Expressed in thousands.				STATE.	Cen- sus year.	Num- ber of estab- lish- ments.	Wage earn- ers (aver- age num- ber).	Pri- mary horse- power. ¹	Expressed in thousands.			
					Capital.	Wages.	Cost of ma- terials.	Value of prod- ucts.						Capital.	Wages.	Cost of ma- terials.	Value of prod- ucts.
United States...	1916	1,137	72,497	.....	\$243,218	\$60,576	\$39,269	\$185,852	New Hampshire.....	1916	6	17	.....	22	9	13	48
	1914	1,147	44,489	115,333	156,060	32,931	38,597	88,682		1914	7	14	50	19	10	12	39
	1909	1,353	40,506	88,063	126,118	25,268	31,214	73,360		1909	8	9	41	11	4	5	17
California.....	1916	50	7,113	.....	11,619	7,199	10,245	19,778	New Jersey.....	1916	76	7,777	.....	37,333	6,576	9,904	20,312
	1914	52	3,457	4,697	8,147	3,196	3,487	8,104		1914	85	6,324	11,944	36,028	4,657	5,636	11,861
	1909	43	1,844	3,129	8,329	1,592	1,237	4,132		1909	97	4,869	9,904	19,176	3,300	4,249	8,841
Connecticut.....	1916	31	1,312	.....	22,689	1,241	1,237	6,217	New York.....	1916	200	9,928	.....	32,010	9,887	11,530	31,358
	1914	37	514	1,303	2,370	458	342	1,665		1914	207	6,076	17,664	17,999	4,971	5,173	14,195
	1909	43	427	1,454	1,468	254	315	742		1909	255	5,644	13,835	14,084	3,780	3,925	11,417
Georgia.....	1916	7	216	.....	942	153	218	454	Ohio.....	1916	32	5,059	.....	21,935	3,908	6,077	12,160
	1914	4	14	26	11	8	4	16		1914	29	2,879	9,661	12,870	1,939	1,909	4,717
	1909	.....	.....	.....	.....	.....	.....	.....		1909	39	3,200	8,125	13,625	1,705	2,462	5,676
Indiana.....	1916	10	184	.....	495	108	291	463	Pennsylvania.....	1916	30	6,440	.....	61,660	5,408	9,252	16,816
	1914	9	225	549	611	134	267	506		1914	33	4,773	9,694	18,285	3,411	4,797	9,540
	1909	15	253	785	484	106	243	375		1909	31	3,558	7,771	15,203	2,120	2,710	6,178
Kentucky.....	1916	17	168	.....	114	112	140	279	Texas.....	1916	14	250	.....	356	160	210	516
	1914	11	90	164	311	52	135	222		1914	14	168	316	104	123	279	474
	1909	10	157	524	271	97	155	271		1909	6	36	21	23	30	34	76
Maryland.....	1916	50	5,326	.....	13,806	3,773	5,845	12,206	Washington.....	1916	57	3,744	.....	14,804	3,455	6,506	10,830
	1914	42	2,468	5,979	4,942	1,573	2,102	4,521		1914	64	1,444	5,866	4,600	1,152	987	3,101
	1909	46	1,793	6,795	4,413	1,098	1,849	3,535		1909	60	744	2,105	2,039	643	562	1,550
Michigan.....	1916	55	2,225	.....	7,673	1,857	3,120	5,637	Wisconsin.....	1916	30	1,250	.....	4,835	822	1,612	3,827
	1914	62	1,261	7,565	6,090	1,040	1,259	2,823		1914	34	695	3,875	4,109	421	451	1,254
	1909	91	2,344	6,485	6,972	1,380	2,490	5,034		1909	52	906	3,506	3,025	540	819	1,900
Minnesota.....	1916	28	115	.....	281	88	119	269	All other states.....	1916	444	21,373	.....	12,644	15,820	22,950	44,682
	1914	30	125	352	223	89	157	317		1914	427	13,962	35,628	35,741	9,697	11,600	25,327
	1909	33	209	419	380	139	158	377		1909	524	14,513	23,164	36,615	8,480	10,001	23,239

¹ Not reported in 1916.

² Figures can not be shown without disclosing individual operations.

TABLE 36.—DETAIL STATISTICS FOR SHIPBUILDING,

STATE.		Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.										WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.				
			Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.				Total.	16 and over.		Under 16.		
						Male.	Fe-male.	Average number.	Number, 15th day of—		Male.		Fe-male.	Male.	Fe-male.		
									Maximum month.	Minimum month.							
1	United States.....	1, 137	78, 333	1, 103	1, 550	2, 818	365	72, 497	De	85, 928	Ja	59, 433	86, 324	85, 708	140	476	.....
2	Alabama.....	8	569	5	15	8	.....	541	De	762	Ja	385	764	764	.....	.....	.....
3	Arkansas.....	4	4	4	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	.....
4	California.....	50	7, 394	43	69	145	24	7, 113	De	9, 240	Ja	4, 952	9, 262	9, 258	2	2	.....
5	Connecticut.....	31	1, 573	24	71	124	42	1, 312	No	1, 741	Fe	909	1, 559	1, 524	27	8	.....
6	Delaware.....	9	2, 104	4	66	86	10	1, 938	Se	2, 258	Jy	1, 448	2, 183	2, 130	.....	53	.....
7	Florida.....	57	1, 291	59	39	20	1	1, 172	De	1, 459	Mh	934	1, 373	1, 370	1	2	.....
8	Georgia.....	7	252	6	12	13	5	216	De	473	Ap	74	474	474	.....	.....	.....
9	Illinois.....	18	649	18	12	16	5	598	De	737	Au	500	651	650	1	.....	.....
10	Indiana.....	10	223	9	18	10	2	184	Au	217	Ja	142	195	195	.....	.....	.....
11	Iowa.....	10	45	12	3	4	.....	26	Fe	44	No	14	38	38	.....	.....	.....
12	Kentucky.....	17	202	15	13	5	1	168	Jy	247	Ja	75	167	167	.....	.....	.....
13	Louisiana.....	26	1, 413	21	36	45	5	1, 306	De	1, 898	Ap	794	1, 921	1, 911	.....	10	.....
14	Maine.....	100	2, 115	110	63	60	25	1, 857	De	2, 341	Ja	1, 461	2, 365	2, 356	1	8	.....
15	Maryland.....	50	5, 680	51	63	224	16	5, 326	Oc	6, 007	Fe	4, 473	5, 619	5, 607	4	8	.....
16	Massachusetts.....	85	4, 093	80	86	124	30	4, 373	Ja	4, 925	Oc	4, 024	4, 502	4, 501	1	.....	.....
17	Michigan.....	55	2, 416	52	34	80	25	2, 225	Je	2, 921	Oc	1, 784	2, 816	2, 793	1	22	.....
18	Minnesota.....	28	155	30	4	2	4	115	Je	162	De	73	99	99	.....	.....	.....
19	Mississippi.....	18	140	19	1	2	.....	118	Ja	136	Jy	97	146	146	.....	.....	.....
20	New Hampshire.....	6	25	8	.....	.....	.....	17	Je	26	No ¹	12	16	16	.....	.....	.....
21	New Jersey.....	76	8, 600	65	173	561	24	7, 777	De	8, 981	Ja	6, 529	9, 006	9, 005	1	.....	.....
22	New York.....	200	10, 739	207	169	399	36	9, 928	De	11, 516	Ja	7, 909	11, 139	11, 123	15	1	.....
23	North Carolina.....	12	164	14	6	3	.....	141	Oc	208	Mh	81	218	218	.....	.....	.....
24	Ohio.....	32	5, 325	31	54	153	28	5, 059	Au	5, 412	Ja	4, 005	5, 634	5, 623	5	6	.....
25	Oregon.....	26	1, 092	25	24	35	5	1, 003	De	2, 168	Ja	309	2, 175	2, 172	3	.....	.....
26	Pennsylvania.....	30	6, 811	27	96	242	6	6, 440	Oc	7, 419	Ja	5, 082	6, 815	6, 771	13	31	.....
27	Rhode Island.....	14	684	13	17	34	4	616	Je	794	Au	467	592	587	5	.....	.....
28	Tennessee.....	4	49	4	1	1	.....	43	De	73	Fe	13	64	64	.....	.....	.....
29	Texas.....	14	272	13	6	2	1	250	No	326	Mh	159	313	313	.....	.....	.....
30	Vermont.....	4	32	4	3	.....	.....	25	Ap	34	Se	15	28	28	.....	.....	.....
31	Washington.....	57	4, 128	55	99	202	28	3, 744	No	6, 839	Fe	1, 710	6, 717	6, 717	.....	.....	.....
32	West Virginia.....	7	221	5	8	6	.....	202	No	260	Ja	126	253	253	.....	.....	.....
33	Wisconsin.....	30	1, 390	26	34	65	15	1, 250	No	1, 571	Ja	666	1, 644	1, 635	.....	9	.....
34	All other states ²	42	7, 883	44	255	147	23	7, 414	.....	.....	.....	.....	7, 575	7, 199	60	316	.....

¹ Same number reported for one or more other months.² All other states embrace: District of Columbia, 2; Idaho, 2; Missouri, 5; South Carolina, 2; South Dakota, 1; Virginia, 30.

INCLUDING BOAT BUILDING, BY STATES: 1916.

Capital.	EXPENSES.						Value of products.	Value added by manufacture.	
	Salaries and wages.			For contract work.	For materials.				
	Officials.	Clerks, etc.	Wage earners.		Principal materials.	Fuel and rent of power.			
\$243,217,869	\$4,032,671	\$2,918,051	\$60,575,901	\$4,092,789	\$86,726,894	\$2,541,936	\$185,852,192	\$96,583,362	1
715,033	31,749	3,672	421,329	-----	351,641	46,634	1,048,578	650,303	2
2,870	-----	-----	240	-----	3,650	150	8,945	5,145	3
11,618,544	173,356	245,051	7,198,585	288,348	10,062,691	181,902	19,777,911	9,533,318	4
22,680,461	351,687	125,195	1,241,117	2,921,576	1,206,952	29,603	6,217,274	4,980,719	5
5,553,744	132,679	76,169	1,409,802	2,200	2,515,542	80,295	4,328,002	1,732,165	6
2,542,824	63,683	19,911	598,205	7,751	879,618	29,575	1,795,519	886,326	7
942,259	14,390	7,460	153,024	5,000	214,336	3,606	454,390	236,448	8
1,836,011	18,900	8,055	326,097	375	252,395	15,668	760,307	492,244	9
495,068	31,656	8,310	107,637	3,875	284,078	6,837	463,069	172,154	10
165,947	4,445	1,111	20,946	64	43,166	1,833	83,199	38,200	11
113,888	14,220	4,223	111,961	925	138,614	1,705	279,168	138,849	12
3,963,065	72,684	36,733	784,154	37,694	1,013,366	21,186	2,606,767	1,572,215	13
4,211,955	139,648	65,094	1,353,755	22,378	2,519,765	56,040	4,882,131	2,306,326	14
13,806,495	108,522	179,925	3,772,631	-----	5,640,835	194,833	12,205,557	6,360,889	15
10,136,660	243,242	111,649	4,409,466	2,652	6,779,288	153,404	12,185,354	5,252,662	16
7,672,524	92,963	65,194	1,857,021	15,916	2,967,064	152,739	5,637,103	2,517,300	17
281,202	5,700	3,988	87,603	1,700	113,805	5,278	269,256	150,173	18
109,761	900	1,800	70,865	1,800	118,019	1,650	304,578	184,909	19
22,415	-----	-----	9,085	892	12,301	520	47,952	35,131	20
37,332,760	519,970	578,996	6,575,530	145,836	9,682,734	220,902	20,311,529	10,407,893	21
32,009,922	554,551	487,928	9,886,899	64,600	11,165,879	363,981	31,357,645	19,827,785	22
200,168	4,498	647	54,364	-----	42,306	1,346	188,640	144,988	23
21,934,830	226,884	192,898	3,907,725	28,443	5,841,702	235,050	12,160,007	6,083,255	24
2,530,166	34,275	20,326	833,841	42	1,585,712	25,604	2,915,346	1,304,030	25
21,660,089	326,511	217,773	5,407,553	2,647	8,962,761	289,423	16,816,071	7,563,887	26
756,561	29,735	29,855	518,374	481,692	380,330	20,804	1,523,614	1,122,480	27
20,514	969	276	22,236	-----	11,836	730	35,143	22,577	28
356,001	12,120	2,536	160,165	-----	207,154	2,370	515,972	306,448	29
115,892	3,640	-----	16,830	-----	5,001	1,380	33,521	27,140	30
14,804,465	204,032	205,778	3,455,314	52,383	6,412,941	92,962	10,829,812	4,323,909	31
357,111	15,428	5,445	118,999	-----	133,510	2,912	308,872	172,450	32
4,835,136	93,464	63,815	821,645	-----	1,561,442	50,503	3,826,847	2,214,902	33
19,424,528	506,170	148,238	4,862,903	4,000	5,607,460	250,511	11,674,113	5,816,142	34

TABLE 37.—DETAIL STATISTICS FOR SHIPBUILDING.

STATE.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.						Capital.
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.			Total.	16 and over.		Under 16.			
					Male.	Female.	Average number.	Number, 15th day of—			Male.	Female.	Male.	Female.		
								Maximum month.	Minimum month.							
SHIPBUILDING, INCLUDING BOAT BUILDING.																
1	United States.....	1,147	48,667	1,192	995	1,765	226	44,489	My 49,567	No 37,843	42,735	42,453	90	11	1	\$156,059,938
2	California.....	52	3,730	42	70	146	15	3,457	Ja 3,917	Se 3,005	3,978	3,966	9	3	.....	8,147,431
3	Connecticut.....	37	673	30	40	63	26	514	My 594	Fe 402	552	538	9	5	.....	2,369,613
4	Georgia.....	4	18	4	.....	.....	.....	14	Jy ^a 18	Ja ^a 11	11	11	.....	.....	.....	11,275
5	Indiana.....	9	249	6	9	8	1	225	Au 265	De 162	168	168	.....	.....	.....	610,660
6	Kentucky.....	11	117	13	9	4	1	90	Je 134	Au 29	156	156	.....	.....	.....	311,388
7	Maryland.....	42	2,685	44	68	97	8	2,468	Jy 2,681	De 2,171	2,488	2,474	7	7	.....	4,942,061
8	Michigan.....	62	1,430	61	41	51	16	1,261	My 1,783	De 431	650	647	2	1	.....	6,689,776
9	Minnesota.....	30	169	36	3	2	3	125	My 163	Oc 92	128	128	.....	.....	.....	223,150
10	New Hampshire.....	7	24	10	.....	.....	.....	14	Ap ^a 15	De 12	18	18	.....	.....	.....	19,100
11	New Jersey.....	85	6,981	74	129	438	16	6,324	Je 6,827	Se 5,921	6,129	6,128	1	.....	.....	36,028,113
12	New York.....	207	6,732	224	136	264	32	6,076	My 7,078	Se 5,359	5,762	5,755	6	.....	1	17,998,894
13	Ohio.....	29	3,046	29	45	72	21	2,879	Mh 3,566	No 2,076	2,696	2,694	.....	2	.....	12,870,446
14	Pennsylvania.....	33	5,052	37	67	173	2	4,773	Je 5,710	De 3,514	3,630	3,581	9	40	.....	18,285,168
15	Texas.....	14	189	13	7	1	.....	168	Se 241	Fe 105	170	168	.....	2	.....	103,854
16	Washington.....	64	1,623	75	36	60	8	1,444	Fe 1,717	No 1,126	1,302	1,300	2	.....	.....	4,599,883
17	Wisconsin.....	34	789	33	27	28	6	695	My 1,048	Se 356	669	667	1	1	.....	4,109,355
18	All other states ^a	427	15,160	461	308	358	71	13,962	.....	.....	14,228	14,054	44	130	.....	38,739,771

SHIPBUILDING, STEEL.

1 United States.....	79	35,664	24	561	1,447	124	33,508	Mh 36,788	No 28,107	31,662	31,599	63	175	1	\$132,712,414
2 California.....	8	3,291	.....	53	131	11	3,096	Oc ^a 277	Ja 105	3,554	3,554	.....	.....	.....	7,529,481
3 Connecticut.....	3	331	.....	26	57	22	226	No ^a 277	Ja 105	275	262	9	4	.....	1,202,187
4 Indiana.....	3	202	.....	6	8	1	187	Au 217	De 135	135	135	.....	.....	.....	552,503
5 Maryland.....	7	2,182	2	52	83	6	2,099	Ja 2,274	De 1,823	2,043	2,030	7	6	.....	4,321,595
6 Michigan.....	6	1,010	5	27	36	7	935	My 1,340	De 236	350	350	.....	.....	.....	5,858,876
7 New Jersey.....	6	5,607	2	79	382	2	5,142	Je 5,502	Oc 4,810	4,985	4,985	.....	.....	.....	33,120,371
8 New York.....	11	3,222	6	32	149	12	3,023	My 3,511	No 2,659	2,877	2,874	2	.....	1	10,692,514
9 Ohio.....	5	2,739	.....	32	66	18	2,623	Mh 3,336	No 1,828	2,448	2,446	.....	2	.....	12,410,669
10 Wisconsin.....	3	545	.....	15	23	3	504	My 822	Se 195	480	479	.....	1	.....	3,760,779
11 All other states ^a	27	16,535	9	239	512	42	15,733	.....	.....	14,515	14,484	45	162	.....	53,263,439

SHIPBUILDING, WOODEN, INCLUDING BOAT BUILDING.

1 United States.....	1,068	13,003	1,168	434	318	102	10,981	My 12,794	De 9,224	10,897	10,854	27	16	.....	23,347,524
2 California.....	44	439	42	17	15	4	361	Fe 409	Au 274	424	412	9	3	.....	617,950
3 Connecticut.....	34	342	30	14	6	4	288	My 357	No 230	277	276	.....	1	.....	1,167,426
4 Delaware.....	6	58	5	6	.....	.....	47	Se 67	No 30	59	59	.....	.....	.....	82,675
5 Florida.....	65	584	76	15	6	1	486	Oc 602	Jy 413	484	482	.....	2	.....	1,095,969
6 Georgia.....	4	18	4	.....	.....	.....	14	Au ^a 18	Ja ^a 11	11	11	.....	.....	.....	11,275
7 Illinois.....	21	187	22	16	6	6	137	Ap 179	De 98	137	137	.....	.....	.....	394,351
8 Indiana.....	6	47	6	3	.....	.....	38	Au 48	De 27	33	33	.....	.....	.....	58,157
9 Iowa.....	10	22	13	.....	.....	.....	9	Ap 13	Ja ^a 7	10	10	.....	.....	.....	37,476
10 Kentucky.....	11	117	13	9	4	1	90	Je 134	Au 29	156	156	.....	.....	.....	311,388
11 Louisiana.....	15	454	16	12	6	1	419	Fe 551	No 266	442	439	.....	3	.....	610,809
12 Maine.....	105	621	121	21	6	12	461	Mh 512	De 363	479	475	4	.....	.....	1,062,308
13 Maryland.....	35	503	42	16	14	2	429	Je 502	De 348	445	444	.....	1	.....	620,466
14 Massachusetts.....	81	565	81	31	7	11	435	My 570	Ja 314	429	426	1	2	.....	788,574
15 Michigan.....	56	420	56	14	15	9	326	My 443	De 195	300	297	2	1	.....	830,900
16 Minnesota.....	30	169	36	3	2	3	125	My 163	Oc 92	128	128	.....	.....	.....	223,150
17 Mississippi.....	11	77	12	.....	.....	.....	65	Ja ^a 83	Jy 47	61	61	.....	.....	.....	32,966
18 New Hampshire.....	7	24	10	.....	.....	.....	14	Jy ^a 15	De 12	18	18	.....	.....	.....	19,100
19 New Jersey.....	79	1,374	72	50	56	14	1,182	Je 1,325	Fe 1,057	1,144	1,143	1	.....	.....	2,907,742
20 New York.....	196	3,510	218	104	115	20	3,053	My 3,567	Se 2,654	2,885	2,881	4	.....	.....	7,306,380
21 North Carolina.....	10	69	11	1	1	.....	56	Ja 76	My ^a 51	52	52	.....	.....	.....	85,005
22 Ohio.....	24	307	29	13	6	3	256	Se 298	Mh 230	248	248	.....	.....	.....	459,777
23 Oregon.....	20	199	31	2	2	1	163	Mh 223	De 106	161	161	.....	.....	.....	435,199
24 Rhode Island.....	13	109	14	4	5	.....	86	Mh 119	De 54	72	72	.....	.....	.....	118,044
25 Texas.....	14	189	13	7	1	.....	168	Se 241	Fe 105	170	168	.....	2	.....	103,854
26 West Virginia.....	4	132	4	4	5	.....	119	Ap 153	Oc 86	126	126	.....	.....	.....	187,429
27 Wisconsin.....	31	244	33	12	5	3	191	Je 243	De 150	189	188	1	.....	.....	348,576
28 All other states ^a	136	2,223	158	60	35	7	1,963	.....	.....	1,957	1,951	5	1	.....	3,430,580

¹ Owned power only.² Includes rented power, other than electric.^a Same number reported for one or more other months.

^a All other states embrace: Alabama, 4 establishments; Delaware, 8; District of Columbia, 2; Florida, 66; Idaho, 2; Illinois, 22; Iowa, 11; Louisiana, 17; Maine, 107; Massachusetts, 84; Mississippi, 12; Missouri, 3; North Carolina, 11; Oregon, 21; Rhode Island, 15; South Carolina, 2; South Dakota, 1; Tennessee, 3; Vermont, 2; Virginia, 29; West Virginia, 5.

INCLUDING BOAT BUILDING, BY STATES: 1914.

EXPENSES.								Value of products.	Value added by manufacture.	POWER.				
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.				Electric horse-power generated in establishments reporting.
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, including internal revenue and corporation income.	Principal materials.	Fuel and rent of power.			Total.	Steam engines. ¹	Internal-combustion engines. ²	Water wheels and motors. ³		Electric (rented)

SHIPBUILDING, INCLUDING BOAT BUILDING.

\$2,741,432	\$2,017,377	\$32,931,156	\$531,779	\$416,749	\$706,395	\$37,178,602	\$1,418,368	\$88,682,071	\$50,085,101	115,333	79,599	5,555	94	30,085	36,190	1
174,256	254,118	3,196,424	34,726	24,170	72,375	3,377,146	109,438	8,104,033	4,617,449	4,097	2,210	84	.....	2,403	5	2
191,307	112,433	458,379	895	11,069	5,238	327,061	15,140	1,665,293	1,323,092	1,303	646	111	30	516	.....	3
.....	.....	8,055	.....	366	90	4,231	106	15,840	11,503	.....	.....	23	.....	3	.....	4
16,054	8,120	134,404	500	.....	2,994	260,383	7,088	506,362	238,891	549	370	76	.....	103	.....	5
15,271	4,180	52,356	375	835	1,065	131,069	2,896	221,788	87,223	164	95	39	.....	30	11	6
107,746	56,714	1,573,469	.....	13,002	25,772	2,028,870	72,960	4,521,169	2,419,339	5,979	4,797	230	.....	952	2,433	7
84,560	56,743	1,039,516	5,693	5,592	44,553	1,189,847	68,896	2,822,557	1,563,814	7,565	6,898	298	16	353	2,241	8
4,500	3,099	89,323	1,700	1,399	1,829	153,530	3,964	317,111	159,617	352	122	186	.....	44	.....	9
.....	.....	10,138	750	60	266	11,742	526	38,525	26,257	50	25	20	.....	5	.....	10
400,188	455,984	4,657,008	2,757	69,452	54,376	5,486,445	149,849	11,860,965	6,224,671	11,944	10,633	569	.....	742	5,114	11
427,490	330,568	4,971,058	127,112	151,177	112,938	4,954,781	217,997	14,195,298	9,022,520	17,664	7,539	1,203	20	8,902	755	12
169,383	79,059	1,938,565	2,497	3,720	91,629	1,764,752	143,828	4,716,787	2,808,207	9,661	7,970	90	.....	1,601	6,251	13
230,190	143,732	3,411,350	176	4,079	46,782	4,635,922	161,353	9,539,865	4,742,590	9,694	2,243	37	26	7,388	17	14
11,410	1,250	123,256	.....	1,291	270	277,827	823	473,524	194,874	316	222	94	.....	.....	1	15
90,250	117,970	1,151,913	32,180	14,168	45,237	951,776	35,087	3,101,446	2,114,583	5,866	3,856	122	.....	1,886	1,055	16
51,664	31,701	420,593	5,166	30,617	20,377	424,001	27,154	1,254,088	802,933	3,875	3,108	189	.....	578	717	17
767,154	361,706	9,695,349	322,418	111,203	170,304	11,198,619	401,263	25,327,420	13,727,538	35,628	28,865	2,184	2	4,577	17,590	18

SHIPBUILDING, STEEL.

\$1,936,266	\$1,650,346	\$25,165,792	\$442,135	\$123,487	\$545,478	\$28,097,457	\$1,172,270	\$66,216,692	\$36,946,965	83,706	60,208	574	.....	22,924	35,376	1
148,781	240,529	2,855,873	32,585	6,000	70,398	2,995,464	103,540	7,130,577	4,031,573	3,456	1,480	.....	.....	1,976	.....	2
164,576	105,752	235,953	.....	7,000	1,305	125,557	5,757	1,107,717	976,408	362	.....	.....	.....	362	.....	3
13,524	8,120	112,309	500	.....	2,614	252,772	6,505	465,936	206,659	433	285	50	.....	98	.....	4
91,206	47,055	1,323,096	.....	2,200	20,337	1,705,212	65,049	3,776,809	2,006,548	4,749	4,177	50	.....	522	2,301	5
63,969	39,219	810,473	.....	.....	37,210	466,890	60,412	2,261,069	1,253,767	4,617	4,525	.....	.....	92	2,241	6
290,352	394,134	3,740,073	898	32,512	31,923	4,439,115	117,145	9,292,706	4,736,446	8,616	8,068	.....	.....	548	4,500	7
183,354	183,547	2,478,255	86,520	38,975	59,697	2,161,352	128,993	6,835,156	4,544,811	9,728	2,850	260	.....	6,618	741	8
148,588	72,970	1,791,649	.....	730	88,626	1,571,259	140,066	4,291,645	2,580,320	8,748	7,242	.....	.....	1,506	6,251	9
34,883	26,917	298,915	.....	.....	27,686	230,524	21,999	851,281	598,758	3,397	2,920	.....	.....	477	714	10
797,033	532,103	11,518,596	321,632	36,070	205,682	13,669,312	522,804	30,203,796	16,011,680	39,600	28,661	214	.....	10,725	18,628	11

SHIPBUILDING, WOODEN, INCLUDING BOAT BUILDING.

805,166	367,031	7,765,364	89,644	293,262	160,917	9,081,145	246,098	22,465,379	13,138,136	31,627	19,391	4,762	94	7,161	814	1
25,475	13,589	340,551	2,141	18,170	1,977	381,682	5,898	973,456	585,876	1,241	730	84	.....	427	5	2
26,731	6,681	222,426	895	4,069	3,933	201,504	9,383	557,576	346,689	941	646	111	30	154	.....	3
3,694	.....	27,544	.....	700	284	43,617	1,438	82,654	37,599	195	163	27	.....	5	.....	4
46,236	9,280	334,287	3,798	4,825	7,192	268,223	12,178	804,399	523,998	1,489	422	687	.....	380	1	5
.....	.....	8,055	.....	366	90	4,231	106	15,840	11,503	26	.....	23	.....	3	.....	6
22,470	6,817	99,909	524	4,941	1,137	105,307	2,852	283,341	175,182	251	.....	123	.....	128	13	7
2,530	.....	22,095	.....	.....	380	7,611	583	40,426	32,232	116	85	26	.....	5	.....	8
.....	.....	6,128	.....	116	221	12,424	418	32,500	19,658	44	4	33	2	5	.....	9
15,271	4,180	52,356	375	835	1,065	131,069	2,896	221,788	87,223	164	95	39	.....	30	11	10
18,540	5,566	234,769	.....	1,716	3,372	263,113	5,356	663,263	394,794	1,144	940	174	.....	30	.....	11
34,116	11,994	283,776	7,518	4,372	10,480	635,754	10,353	1,192,866	546,759	1,270	575	276	.....	419	.....	12
16,540	9,659	249,773	.....	10,502	5,435	323,658	7,911	744,360	412,791	1,230	620	180	.....	430	132	13
58,607	13,009	328,025	11,842	35,154	8,685	385,373	9,900	1,061,115	665,842	1,513	696	269	.....	548	2	14
20,591	17,524	229,043	5,693	5,592	7,343	242,957	8,484	561,488	310,047	2,948	2,373	298	16	261	.....	15
4,500	3,099	89,323	1,700	1,399	1,829	153,530	3,964	317,111	159,617	352	122	186	.....	44	.....	16
.....	.....	31,278	2,200	519	272	46,072	714	101,362	54,576	170	145	12	.....	13	.....	17
.....	.....	10,138	750	60	266	11,742	526	38,525	26,257	50	25	20	.....	5	.....	18
109,836	61,850	916,935	1,859	36,940	22,453	1,047,330	32,704	2,568,259	1,488,225	3,328	2,565	569	.....	194	614	19
244,145	147,021	2,492,803	40,592	112,202	53,301	2,793,429	89,004	7,360,142	4,477,709	7,936	4,689	943	20	2,284	14	20
1,200	520	33,853	.....	175	1,196	37,471	428	93,175	55,276	100	62	35	.....	3	.....	21
20,795	6,089	146,916	2,497	2,990	3,003	193,493	3,762	425,142	227,887	913	728	90	.....	95	.....	22
5,060	3,070	157,960	.....	4,369	3,734	111,557	2,891	332,074	217,626	445	247	51	.....	147	.....	23
4,175	3,657	101,166	15	5,953	971	40,668	2,208	158,774	115,898	363	230	14	.....	119	1	24
11,410	1,250	123,256	.....	1,291	270	277,827	823	473,524	194,874	316	222	94	.....	.....	1	25
7,009	3,921	56,590	.....	.....	736	80,261	752	160,808	79,885	138	138	.....	.....	.....	.....	26
16,781	4,784	121,678	.....	5,166	2,931	193,477	5,155	402,807	201,175	478	188	189	.....	101	3	27
89,454	33,571	1,084,731	7,245	30,540	18,361	1,087,165	25,411	2,798,514	1,683,938	4,466	2,681	209	26	1,331	17	28

¹ All other states embrace: Delaware, 2 establishments; Florida, 1; Illinois, 1; Iowa, 1; Louisiana, 2; Maine, 2; Massachusetts, 3; Mississippi, 1; North Carolina, 1; Oregon, 1; Pennsylvania, 5; Rhode Island, 2; Virginia, 1; Washington, 3; West Virginia, 1.

² All other states embrace: Alabama, 4 establishments; District of Columbia, 2; Idaho, 2; Missouri, 3; Pennsylvania, 28; South Carolina, 2; South Dakota, 1; Tennessee, 3; Vermont, 2; Virginia, 28; Washington, 61.



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